

# Naval Research Laboratory

Stennis Space Center, MS 39529-5004



NRL/FR/7441--96-9649

## An Initial Design for an Extended Vector Product Format Prototype for Modeling and Simulation

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April 11, 1997

19970609 138

DTIC QUALITY INSPECTED 3

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# REPORT DOCUMENTATION PAGE

Form Approved  
OBM No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

|   |  |   |  |  |  |
|---|--|---|--|--|--|
| 1. AGENCY USE ONLY (Leave blank)  |  | 2. REPORT DATE<br>April 11, 1997                        |  | 3. REPORT TYPE AND DATES COVERED<br>Final  |  |
| 4. TITLE AND SUBTITLE<br>An Initial Design for an Extended Vector Product Format Prototype for Modeling and Simulation  |  |   |  | 5. FUNDING NUMBERS<br>Job Order No. 574590800<br>Program Element No. RDT&EDA<br>Project No.<br>Task No.<br>Accession No. |  |
| 6. AUTHOR(S)<br>Kevin Shaw, H. Vincent Miller <sup>†</sup> , Barbara Ray <sup>††</sup> , Robert Broome <sup>††</sup> , Todd Lovitt <sup>††</sup> , Mahdi Abdelguerfi*, Edgar Cooper*, and Chris Wynne*,   |  |   |  |  |  |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br>Naval Research Laboratory<br>Marine Geosciences Division<br>Stennis Space Center, MS 39529-5004   |  |   |  | 8. PERFORMING ORGANIZATION REPORT NUMBER<br><br>NRL/FR/7441--96-9649   |  |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)<br>Defense Modeling and Simulation Office<br>DoD Washington Headquarters Services<br>Installation Accounting Service<br>The Pentagon<br>Washington, D.C. 20301-1158   |  |   |  | 10. SPONSORING/MONITORING AGENCY REPORT NUMBER   |  |
| 11. SUPPLEMENTARY NOTES<br><br><sup>†</sup> Mississippi State University, Stennis Space Center, MS; <sup>††</sup> Planning Systems Incorporated, 115 Christian Lane, Slidell, LA;<br>*University of New Orleans, New Orleans, LA  |  |   |  |  |  |
| 12a. DISTRIBUTION/AVAILABILITY STATEMENT<br><br>Approved for public release; distribution unlimited.  |  |   |  | 12b. DISTRIBUTION CODE   |  |
| 13. ABSTRACT (Maximum 200 words)<br><br>Having been tasked with making the Defense Mapping Agency's (DMA) georelational Vector Product Format (VPF) more receptive to the needs of the modeling and simulation community, the Digital Mapping, Charting, and Geodesy Analysis Program (DMAP) has designed a prototype Modeling and Simulation Extended Vector Product (MSEVP). Based on DMAP's Extended Vector Product Format, MSEVP's features and attributes are extensively defined and are intended to satisfy documented deficiencies of VPF. Rationale and data sources are also discussed. This prototype is currently under review by DMA to determine if it should be further developed. |  |   |  |  |  |
| 14. SUBJECT TERMS<br><br>digital MC&G, requirements analysis, modeling and simulation, object oriented database   |  |   |  | 15. NUMBER OF PAGES<br>679   |  |
|   |  |   |  | 16. PRICE CODE   |  |
| 17. SECURITY CLASSIFICATION OF REPORT<br>Unclassified   | 18. SECURITY CLASSIFICATION OF THIS PAGE<br>Unclassified | 19. SECURITY CLASSIFICATION OF ABSTRACT<br>Unclassified | 20. LIMITATION OF ABSTRACT<br>Same as report |  |  |

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## **EXECUTIVE SUMMARY**

The Digital Mapping, Charting, and Geodesy Analysis Program has designed a prototype following its previously defined Extended Vector Product Format (EVPF). Using the relational database format, this prototype, named Modeling and Simulation Extended Vector Product (MSEVP) since its users will primarily be from the modeling and simulation (M&S) community, has gone through many phases of evolution in terms of its feature and attribute content. Eleven coverages have been defined, giving the prototype a comprehensive advantage over ordinary vector products. MSEVP also borrows feature attribution explicitly defined by other formats, allowing for a more comprehensive M&S product. Since EVPF allows for enhanced three-dimensional capabilities (enhanced in the sense of access time and storage), MSEVP also benefits in that respect. An area of interest, Killeen, TX, has been used for this initial prototype as Defense Mapping Agency (DMA) data are abundant in that area. Pending DMA approval of EVPF and MSEVP, the MSEVP prototype should better satisfy DMA's vector product deficiencies documented by the M&S community.

# **AN INITIAL DESIGN FOR AN EXTENDED VECTOR PRODUCT FORMAT PROTOTYPE FOR MODELING AND SIMULATION**

## **1.0 INTRODUCTION**

In today's modeling and simulation (M&S) community, the georelational database format Vector Product Format (VPF) and its products have been documented as not meeting Army, Navy, and Marine Corps requirements [1,2]. The profile [3] defined by the Digital Mapping, Charting, and Geodesy Analysis Program (DMAP) was the first attempt at addressing these deficiencies. In this profile, a format was proposed, the Extended Vector Product Format (EVPF), as well as a prototype product in this format. Also, anticipated difficulties were discussed for designing such a format and prototype, and feature content for the prototype was explicitly stated. What follows in this report is the finalization of the initial design of the EVPF M&S prototype, Modeling and Simulation Extended Vector Product (MSEVP).

Although EVPF remains within the confines of VPF's static relational database structure, MSEVP employs the extensions of VPF which will make it more desirable to the M&S community, based on the previously mentioned requirements surveys. First and foremost is the addition of a more efficient method of storing information relating to the three-dimensional (3-D) representation of object surfaces. Described in [4], the improved triangle-based method of storing Triangulated Irregular Networks (TIN), one of the primary techniques for representing digital elevation, has been shown to be an improvement over VPF's winged-edge topology both in storage and time comparisons. While MSEVP uses the TIN tables to represent terrain only, the concept and table format can be extended to represent other 3-D objects as well, provided that the describing information is available.

Other advantages MSEVP will offer are in the form of previous products. Aeronautical information from the Flight Information Publications and Digital Aeronautical Flight Information File will be made available in MSEVP. This information will be represented in the Transportation coverage.

As is the practice for many Defense Mapping Agency (DMA) prototypes, an area of interest is selected for the first prototype. For the MSEVP, a region over Killeen, TX, has been selected. VPF data exist in this area in the form of Vector Smart Map (VMap) and Digital Topographic Data (DTOP), and this data can be easily imported into EVPF to form a basis for the MSEVP. Moreover, elevation data exist in the form of Digital Terrain Elevation Data (DTED) Level 1, which will be sufficient for demonstrating the EVPF TIN structures and capabilities.

## **2.0 THEMATIC LAYERS**

For the most part, the coverages of the EVPF profile [3] have remained unchanged. Two coverages have been modified and deserve special discussion. A guiding factor for the decision of consolidating coverages was to keep the number of coverages, and hence topological disconnectedness, to a minimum.

The Beach coverage, initially included because of the importance of the coastal zone to military operations, has now been incorporated into a separate layer describing the surface of the Earth in general. This new coverage, Basic Earth Coverage, includes not only beach but data relating to all Earth coverage, including bottom types of hydrological features. The rationale for the change is based on the need by many M&S programs to know detailed information about all soil characteristics. Including all of such information in a single coverage allows for the information to be logically grouped and attributed.

The Aeronautical Information coverage has been moved into the Transportation coverage for the simple reason of having all transportation features in a single coverage, allowing for complete topological connection within the transportation network of an area of interest.

The initial MSEVP will therefore have eleven coverages: Basic Earth Surface, Data Quality, Demarcation, Elevation, Hydrography, Industry, Physical Geography, Population, Transportation, Utilities, and Vegetation.

### **3.0 FEATURE AND ATTRIBUTE CONTENT**

The complete list and description of features and attributes for the eleven coverages of MSEVP are presented by coverage in Apps. B through L. For ease of reader evaluation, most attribute values and definitions are repeated at each occurrence. Any new Feature and Attribute Coding Catalog (FACC) Codes [5] are italicized, as well as presented separately in App. M. Appendix N provides an update on the future direction of some of these FACC coded features, based on responses received at time of publication.

Simple feature classes are indicated by subheadings to the coverages. These logical groupings allow for the definition of common attributes and attribute values.

### **4.0 RESOLUTION**

Since EVPF and its prototype MSEVP are essentially unscaled, no reference to geometric primitives (face, edge, node) is made within the appendices. That is, for every feature, all primitives that are conceivably possible shall be made available. The exception is for features which are inherently zero-, one-, or two-dimensional, such as a depth sounding, which would naturally be a point feature.

In defining the initial prototype, data will be used from a variety of scaled sources, including VMap Level 2, Killeen, TX (1:50k), and DTOP/Interim Terrain Data (ITD) (1:50k).

### **5.0 STANDARD SIMULATOR DATABASE INTERCHANGE FORMAT ATTRIBUTION**

As part of the requirements analyses, DMAP and others determined that many attributes have not been made available in the FACC, but have been defined extensively in Standard Simulator Database Interchange Format. Some of these physical attributes include absorptivity, directivity, and diffuse reflectance.

In an effort to satisfy those users accustomed to these attributes, some of which were specifically requested in requirements surveys, MSEVP in EVPF will make these attributes and their numerical formats available. These will be coded appropriately in FACC codes.

## 6.0 AREA OF INTEREST

The area selected for the prototype will be a  $5' \times 5'$  section:  $-97^{\circ} 30'$  to  $-97^{\circ} 35'$  longitude and  $31^{\circ} 5'$  to  $31^{\circ} 10'$  latitude (Fig. 1). The location is Killeen, TX. Although this section is not a

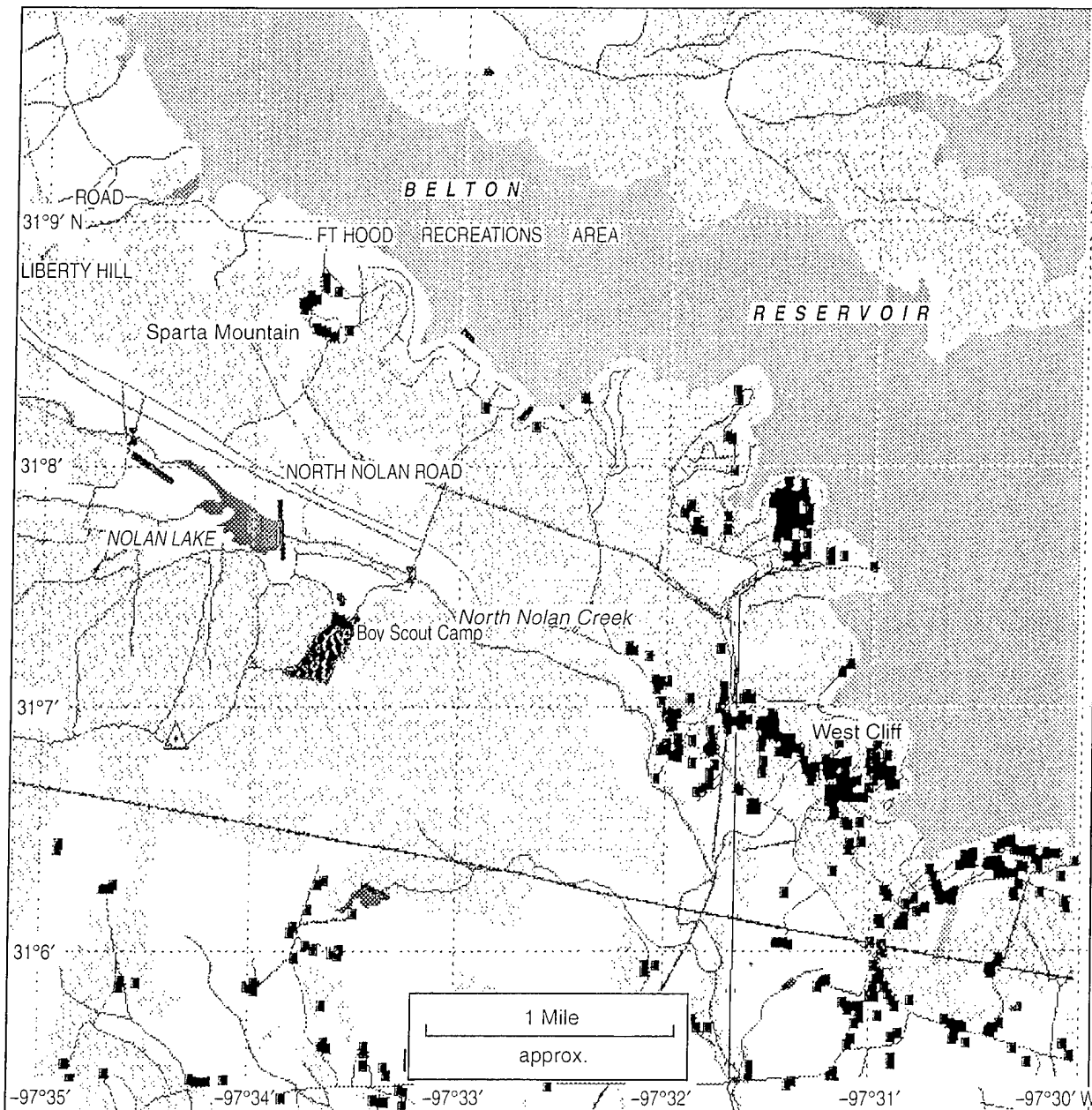


Fig. 1 — Area of interest for MSEVP prototype

complete tile, the information within the corresponding tile of VMap Level 2 will be clipped to this size. Both VMap Level 2 and DTOP offer a selection of features from this geographic area which can be easily imported into EVPF.

DTED Level 1 is also available for this area. The area has sufficiently varying values to produce a respectable TIN for demonstration purposes.

Killeen has a "workable" selection of transportation, population, and vegetation features. Probably the only limitation to this area is hydrography. The inland waterway (Belton Reservoir) will be changed to reflect some of MSEVP features of open water and the land will be extended (i.e., some of the coastal water will be "erased") to form coastal zone for surf, tide information, etc. The geometry (primitive tables) will still be useful. In other words, the area will no longer be Killeen, but a hypothetical city (text names will be changed). VPFView can also be used to determine latitude/longitude coordinates for new simulated features.

## **7.0 SOFTWARE CONSIDERATIONS**

DMA VPF software tools (VPFTool) are in the process of being finalized. With these tools, MSEVP will be constructed from data existing in current VPF products VMap Level 2 and DTOP/ITD. In addition, VPFView will be used to choose locations of DMA's simulated features. These new features will demonstrate MSEVP's effectiveness as a relational vector product for the M&S community.

## **8.0 CONCLUSIONS**

Based on the EVPF developed by DMA, the MSEVP initial design presented in this report represents a significant enhancement of georelational VPF products, an enhancement specifically tailored for the M&S community. Past requirements surveys and recent input from potential users indicate that MSEVP should better satisfy documented deficiencies of the current suite of VPF products.

## **9.0 RECOMMENDATIONS**

Based on a myriad of input, DMA has developed an EVPF prototype design, MSEVP, specifically intended for the M&S community. The appendices of this report display comprehensive features and attributes heretofore unavailable in a single VPF product. DMA recommends that this design be used to create an "evolving" prototype, evolving in the sense that DMA supports continued effort in studying how this prototype can be used and improved for M&S. This prototype is under construction, using the sources (software, databases) made available by DMA. In addition, DMA further intends to investigate how an object-oriented paradigm, as opposed to the current relational one, can be used to enhance MSEVP capabilities.

## **10.0 ACKNOWLEDGMENTS**

This effort was sponsored by the Defense Modeling and Simulation Office and DMA's Terrain Modeling Program Office under Program Element 630603832D, with Mr. Jerry Lenczowski, program manager.

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- [4] Shaw, K., M. Abdelguerfi, E. Cooper, C. Wynne, H. Miller, B. Ray, R. Broome, and T. Fetterer, "An Initial Design of Extended Vector Product Format for Modeling and Simulation," NRL/FR/7441--96-9651, Naval Research Laboratory, Stennis Space Center, MS, Aug 1996.
- [5] Defense Mapping Agency, "The Digital Geographic Information Exchange Standard (DIGEST) Part 4: Feature and Attribute Coding Catalog (FACC)," Edition 1.2, Jan 1994.

## **Appendix A. Acronym List**

|         |   |
|---------|---|
| DAFIF   | Digital Aeronautical Flight Information File            |
| DMA     | Defense Mapping Agency                                  |
| DMAP    | Digital Mapping, Charting, and Geodesy Analysis Program |
| DMSO    | Defense Modeling and Simulation Office                  |
| DTED    | Digital Terrain Elevation Data                          |
| DTOP    | Digital Topographic Data                                |
| EVPF    | Extended Vector Product Format                          |
| FACC    | Feature and Attribute Coding Catalog                    |
| FLIP    | Flight Information Publication                          |
| ITD     | Interim Terrain Data                                    |
| M&S     | Modeling and Simulation                                 |
| MSEVP   | Modeling and Simulation Extended Vector Product         |
| SIF     | Standard Simulator Data Base Interchange Format         |
| SSDB    | Standard Simulator Data Base                            |
| TIN     | Triangulated Irregular Network                          |
| TMPO    | Terrain Modeling Program Office                         |
| VMap    | Vector Smart Map  |
| VPF     | Vector Product Format                                   |
| VPFTool | VPF software tools                                      |
| VPFView | VPF viewing software                                    |

## Appendix B. Basic Earth Surface Coverage

### Surface Feature Class

ID

#### F-CODE/DESCRIPTION

BS010 Soil

BS020 Rock Formation

SA020 Disturbed Soil

An area that has been so disturbed by human activity that no single soil type can be accurately identified. These areas may include built-up areas, strip mines, landfills, railroad yards, etc.

DA005 Asphalt Lake

A natural pool of liquid asphalt.

DA006 Alkali Flats

A sterile plain containing an excess of alkali usually occurring in the bottom of an under drained basin in an arid or semi-arid region. The ground may be soft and have low shearing and bearing strength, and a high organic content.

*ABS*

#### *Absorptivity*

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

*ARA*

#### *Area Coverage Attribute*

The absolute area within the delineation of the feature.

ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

*CCC*

#### *Color Code Category*

Color of the feature.

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |
| CCC | 47 | Magenta                |
| CCC | 48 | Amber                  |
| CCC | 49 | Buff                   |
| CCC | 51 | Bluegreen              |
| CCC | 52 | Bright Blue            |
| CCC | 53 | Aqua                   |



|     |     |               |
|-----|-----|---------------|
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

**CIC**      **Color Intensity Category**  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

**DFR**      **Diffuse Reflectance**

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**DY1**      **Directivity**

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      **Directivity (IR)**

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      **Directivity (Radar)**

Indicator of shape of the planar response curve of a feature or model to a sensor (Radar response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

**EMY**      **Emissivity**

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |



**MCS**      **Material Composition Secondary**  
**Secondary material composition of the feature.**

|     |     |               |
|-----|-----|---------------|
| MCS | 0   | Unknown       |
| MCS | 4   | Ash           |
| MCS | 8   | Boulders      |
| MCS | 12  | Chalk         |
| MCS | 14  | Cinders       |
| MCS | 15  | Cirripedia    |
| MCS | 16  | Clay          |
| MCS | 18  | Cobble        |
| MCS | 24  | Coral         |
| MCS | 25  | Coral Head    |
| MCS | 28  | Diatoms       |
| MCS | 36  | Foraminifera  |
| MCS | 37  | Funus         |
| MCS | 41  | Globigerina   |
| MCS | 45  | Grass /Thatch |
| MCS | 46  | Gravel        |
| MCS | 48  | Ground        |
| MCS | 52  | Lava          |
| MCS | 58  | Madrepores    |
| MCS | 59  | Manganese     |
| MCS | 61  | Marl          |
| MCS | 63  | Mattes        |
| MCS | 65  | Mud           |
| MCS | 66  | Mussels       |
| MCS | 69  | Ooze          |
| MCS | 70  | Oysters       |
| MCS | 73  | Pebbles       |
| MCS | 75  | Polyzoa       |
| MCS | 78  | Pteropods     |
| MCS | 79  | Pumice        |
| MCS | 80  | Quartz        |
| MCS | 81  | Radiolaria    |
| MCS | 84  | Rock /Rocky   |
| MCS | 88  | Sand          |
| MCS | 90  | Schist        |
| MCS | 92  | Scoria        |
| MCS | 93  | Sea Tangle    |
| MCS | 94  | Seaweed       |
| MCS | 96  | Shells        |
| MCS | 98  | Shingle       |
| MCS | 99  | Silt          |
| MCS | 105 | Spicules      |
| MCS | 106 | Sponge        |
| MCS | 108 | Stone         |
| MCS | 111 | Tufa          |

**OIT**      **Object Illumination Type**  
**Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)**  
**Applies to area features.**

|     |   |      |
|-----|---|------|
| OIT | 1 | SELF |
| OIT | 2 | SUN  |

OIT 3 NOSUN

**PSC** Principal Surface Characteristics  
Principal characteristic(s) of the surface.

|     |     |                        |
|-----|-----|------------------------|
| PSC | 0   | Unknown                |
| PSC | 1   | Broken                 |
| PSC | 2   | Coarse                 |
| PSC | 3   | Decayed                |
| PSC | 4   | Fine, minute particles |
| PSC | 5   | Gritty                 |
| PSC | 6   | Hard                   |
| PSC | 7   | Rotten                 |
| PSC | 8   | Soft                   |
| PSC | 9   | Sticky                 |
| PSC | 10  | Stiff                  |
| PSC | 11  | Streaky                |
| PSC | 12  | Tenacious              |
| PSC | 13  | Uneven                 |
| PSC | 14  | Bare/cleared           |
| PSC | 15  | Karst                  |
| PSC | 16  | Membrane               |
| PSC | 17  | Calcareous             |
| PSC | 18  | Flinty                 |
| PSC | 19  | Glacial                |
| PSC | 20  | Ground                 |
| PSC | 21  | Large                  |
| PSC | 22  | Rocky                  |
| PSC | 23  | Small                  |
| PSC | 24  | Speckled               |
| PSC | 25  | Varied                 |
| PSC | 26  | Volcanic               |
| PSC | 27  | Medium                 |
| PSC | 28  | Springs in Seabed      |
| PSC | 29  | Mobile Bottom          |
| PSC | 99  | Medium                 |
| PSC | 999 | Other                  |

**RFL** *Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

**SDC** Soil Depth Category  
General depth of soil or surface material.

| SDC          | 0             | Actual Value |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                 |

**SER** *Self Emitter*

Indicates that an object has self heating characteristics

SER T  
SER F

*SMS**Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flysch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 50  | Green Rocks          |
| SMS | 51  | Ground (Shells)      |
| SMS | 52  | Iron                 |
| SMS | 53  | Lava                 |
| SMS | 55  | Lead                 |
| SMS | 56  | Loess                |
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |

## SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

## SRD

## Surface Roughness Description

Describes the condition of the surface materials that may be used for mobility prediction, construction material, and landing sites.

|     |    |   |
|-----|----|---|
| SRD | 0  | Unknown   |
| SRD | 1  | No surface roughness effect                                 |
| SRD | 2  | Area of high landslide potential                            |
| SRD | 3  | Uncohesive surface material/flat                            |
| SRD | 4  | Rough   |
| SRD | 5  | Angular   |
| SRD | 6  | Rounded   |
| SRD | 11 | Surface of numerous cobbles and boulders                    |
| SRD | 12 | Areas of stony terrain                                      |
| SRD | 13 | Stony soil with surface rock                                |
| SRD | 14 | Stony soil with scattered boulders                          |
| SRD | 15 | Stony soil with numerous boulders                           |
| SRD | 16 | Numerous boulders   |
| SRD | 17 | Numerous rock outcrops and/or stony soil                    |
| SRD | 18 | Area of scattered boulders                                  |
| SRD | 19 | Talus slope   |
| SRD | 20 | Boulder Fields  |
| SRD | 31 | Highly fractured rock surface                               |
| SRD | 32 | Weathered lava flows  |
| SRD | 33 | Unweathered lava flows                                      |
| SRD | 34 | Stony soil with numerous rock outcrops                      |
| SRD | 35 | Irregular surface with deep fractures of foliation          |
| SRD | 36 | Rugged terrain with numerous rock outcrops                  |
| SRD | 37 | Rugged bedrock surface                                      |
| SRD | 38 | Sand dunes  |
| SRD | 39 | Sand dunes / low  |
| SRD | 40 | Sand dunes/ high  |
| SRD | 41 | Active sand dunes   |
| SRD | 42 | Stabilized sand dunes                                       |
| SRD | 43 | Highly distorted area, sharp rocky ridges                   |
| SRD | 51 | Stony soil cut by numerous gullies                          |
| SRD | 52 | Moderately dissected terrain                                |
| SRD | 53 | Moderately dissected terrain with scattered rock outcrops   |
| SRD | 54 | Dissected floodplain  |
| SRD | 55 | Highly dissected terrain                                    |
| SRD | 56 | Area with deep erosional gullies                            |
| SRD | 57 | Steep, rugged, dissected terrain with narrow gullies        |
| SRD | 58 | Karst/areas of numerous sinkholes and solution valleys      |
| SRD | 59 | Karst/area of numerous sinkholes                            |
| SRD | 60 | Karst/hummocky terrain covered with large conical hills     |
| SRD | 61 | Karst/hummocky terrain covered with low, broad-based mounds |
| SRD | 62 | Arroyo/wadi/wash  |

|     |    |   |
|-----|----|---|
| SRD | 63 | Playa/dry lake                                    |
| SRD | 64 | Area of numerous meander scars and/or oxbow lakes |
| SRD | 65 | Solifluction lobes and frost scars                |
| SRD | 66 | Hummocky ground, areas of frost heaving           |
| SRD | 67 | Area of frost polygons                            |
| SRD | 68 | Area containing sabkhas                           |
| SRD | 69 | Area of numerous small lakes and ponds            |
| SRD | 70 | Area of numerous crevasses                        |
| SRD | 81 | Area of numerous terraces                         |
| SRD | 82 | Quarries  |
| SRD | 83 | Strip mines                                       |
| SRD | 84 | Quarry/gravel pit                                 |
| SRD | 85 | Quarry/sand pit                                   |
| SRD | 86 | Mine tailings/waste piles                         |
| SRD | 87 | Salt evaporators                                  |
| SRD | 88 | Area of numerous dikes                            |
| SRD | 89 | Area of numerous diked fields                     |
| SRD | 90 | Area of numerous fences                           |
| SRD | 91 | Area of numerous stone walls                      |
| SRD | 92 | Area of numerous man-made canals/drains/ditches   |
| SRD | 93 | Area of numerous terraced fields                  |
| SRD | 94 | Parallel earthen mounds (row crops)               |
| SRD | 95 | Area of numerous hedgerows                        |

#### *SRT*

#### *Surface Type*

This is a composite attribute (MCC, STP and SMC from the Digest)  
Soils described by the Unified Soil Classification System (USCS) or primary  
material composition.

|     |    |   |
|-----|----|---|
| SRT | 0  | Unknown   |
| SRT | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SRT | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SRT | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SRT | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SRT | 5  | SW Well graded sand or gravelly sands                 |
| SRT | 6  | SP Poorly graded sands or gravelly sands              |
| SRT | 7  | SM Silty sands, sand-silt mixture.                    |
| SRT | 8  | SC Clayey sands, sand-clay mixtures                   |
| SRT | 9  | ML Inorganic silts and very fine sands                |
| SRT | 10 | CL Inorganic clays of low to medium plasticity        |
| SRT | 11 | OL Organic silts and organic silty clays              |
| SRT | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SRT | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SRT | 14 | OH Organic clays of medium to high plasticity         |
| SRT | 15 | PT Peat and other highly organic soils                |
| SRT | 17 | ML-CL Soil type having both ML and CL characteristics |
| SRT | 18 | Evaporites  |
| SRT | 19 | Alkali  |
| SRT | 20 | Asphalt   |
| SRT | 21 | Ash   |
| SRT | 22 | Basalt  |
| SRT | 23 | Bedrock   |
| SRT | 24 | Boulders  |
| SRT | 25 | Calcareous  |
| SRT | 26 | Chalk   |



|     |    |                          |
|-----|----|--------------------------|
| SRT | 27 | Cinders                  |
| SRT | 28 | Cirripedia               |
| SRT | 29 | Clay                     |
| SRT | 30 | Coal                     |
| SRT | 31 | Cobble                   |
| SRT | 32 | Coke                     |
| SRT | 33 | Composition              |
| SRT | 34 | Conglomerate             |
| SRT | 35 | Copper                   |
| SRT | 36 | Coral                    |
| SRT | 37 | Coral Head               |
| SRT | 38 | Diamonds                 |
| SRT | 39 | Diatoms                  |
| SRT | 40 | Dolomite                 |
| SRT | 41 | Flynch                   |
| SRT | 42 | Foraminifera             |
| SRT | 43 | Fucus                    |
| SRT | 44 | Glass                    |
| SRT | 45 | Globigerina              |
| SRT | 46 | Gold                     |
| SRT | 47 | Granite                  |
| SRT | 48 | INTENTIONALLY LEFT BLANK |
| SRT | 49 | Gravel                   |
| SRT | 50 | Green Rocks              |
| SRT | 51 | Ground (Shells)          |
| SRT | 52 | Iron                     |
| SRT | 53 | Lava                     |
| SRT | 55 | Lead                     |
| SRT | 56 | Loess                    |
| SRT | 57 | Lumber                   |
| SRT | 58 | Macadam                  |
| SRT | 59 | Madrepores               |
| SRT | 60 | Manganese                |
| SRT | 61 | Marble                   |
| SRT | 62 | Marl                     |
| SRT | 63 | Mattes                   |
| SRT | 64 | Mud                      |
| SRT | 65 | Oil                      |
| SRT | 66 | Oil Blister              |
| SRT | 67 | Ooze                     |
| SRT | 70 | Pebbles                  |
| SRT | 71 | Pumice                   |
| SRT | 72 | Quartz                   |
| SRT | 73 | Radiolaria               |
| SRT | 74 | Radioactive Material     |
| SRT | 75 | Reinforced Concrete      |
| SRT | 76 | Rock/Rocky               |
| SRT | 77 | Rubber                   |
| SRT | 78 | Rubble                   |
| SRT | 79 | Salt                     |
| SRT | 80 | Sand                     |
| SRT | 81 | Sandstone                |
| SRT | 82 | Schist                   |
| SRT | 83 | Spoils/Tailings          |

|     |     |                   |
|-----|-----|-------------------|
| SRT | 84  | Scoria            |
| SRT | 85  | Sewage            |
| SRT | 86  | Shells            |
| SRT | 87  | Shingle           |
| SRT | 88  | Silt              |
| SRT | 89  | Silver            |
| SRT | 90  | Slag              |
| SRT | 91  | Sludge            |
| SRT | 92  | Snow/Ice          |
| SRT | 93  | Steel             |
| SRT | 94  | Stone             |
| SRT | 95  | Travertin         |
| SRT | 96  | Tufa              |
| SRT | 97  | Uranium           |
| SRT | 98  | Volcanic          |
| SRT | 99  | Volcanic Ash      |
| SRT | 100 | Zinc              |
| SRT | 101 | Distorted surface |
| SRT | 102 | Sand and gravel   |
| SRT | 103 | Rip-Rap           |
| SRT | 104 | Kelp              |
| SRT | 105 | Sandwaves         |
| SRT | 500 | Not Evaluated     |
| SRT | 999 | Other             |

*SS1 Sensors Supported*

*SS2*

*SS3*

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*STG*

Soil Trafficability Group

Soils described by the Unified Soil Classification System categorized by their wet weather trafficability characteristics.

STG 0 Unknown

STG 1 A

STG 2 B

STG 3 C

STG 4 D

STG 5 E

STG 6 X

*SWC*

Wetness Index (Soil Wetness Condition)

General moisture content or condition of a soil or surface material.

SWC 0 Unknown

SWC 1 Dry

SWC 2 Moist

SWC 3 Wet

SWC 4 Frozen/Permafrost

SWC 999 Other

*TMR*

Texture Map Reflectance

Reflectance value assigned to a texture map

|            | Units  | Format      | Range                              | Increment | Max Char |
|------------|--|-------------|------------------------------------|-----------|----------|
|            |  | Real (f7.6) | 0.0 .. 1.0                         |           |          |
| <b>TRL</b> | <i>Translucency</i>  |             |                                    |           |          |
|            | The degree to which a surface is transparent.  |             |                                    |           |          |
|            | Type - Real(6 sd)  |             | Range - 0.0 .. 100.0               |           |          |
|            | Units  | Format      | Range                              | Increment | Max Char |
|            |  | Real (f7.3) | 0.0 .. 100.0                       |           |          |
| <b>TRV</b> | <i>Transmissivity</i>  |             |                                    |           |          |
|            | Ratio of energy transmitted by an object to the amount of energy incident upon it.     |             |                                    |           |          |
|            | Units  | Format      | Range                              | Increment | Max Char |
|            |  | Real (f7.6) | 0.0 .. 1.0                         |           |          |
| <b>TTP</b> | <i>Texture Type</i>  |             |                                    |           |          |
|            | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC). |             |                                    |           |          |
|            | TTP  | 1           | RGB                                |           |          |
|            | TTP  | 2           | GRAY                               |           |          |
|            | TTP  | 3           | MULTI                              |           |          |
|            | TTP  | 4           | SMFD                               |           |          |
| <b>TXT</b> | <i>Text Attribute</i>  |             |                                    |           |          |
|            | Narrative or other description.  |             |                                    |           |          |
|            | TXT  | 0           | Actual Value                       |           |          |
|            | Units  | Format      | Range                              | Increment | Max Char |
|            |  | Text String | Lexical                            |           | 256      |
| <b>USE</b> | <i>Usage</i>   |             |                                    |           |          |
|            | Use (identifies the primary user, function, or controlling authority).                 |             |                                    |           |          |
|            | USE  | 0           | Unknown                            |           |          |
|            | USE  | 4           | National                           |           |          |
|            | USE  | 5           | State                              |           |          |
|            | USE  | 6           | Private                            |           |          |
|            | USE  | 7           | Tribal                             |           |          |
|            | USE  | 8           | Military                           |           |          |
|            | USE  | 10          | Other                              |           |          |
|            | USE  | 11          | Motel/Hotel                        |           |          |
|            | USE  | 12          | Apartment                          |           |          |
|            | USE  | 13          | Open                               |           |          |
|            | USE  | 14          | VALUE INTENTIONALLY LEFT BLANK     |           |          |
|            | USE  | 15          | VALUE INTENTIONALLY LEFT BLANK     |           |          |
|            | USE  | 16          | City                               |           |          |
|            | USE  | 17          | Advertising Billboard              |           |          |
|            | USE  | 18          | Scoreboard                         |           |          |
|            | USE  | 19          | Highway Sign                       |           |          |
|            | USE  | 20          | Closed                             |           |          |
|            | USE  | 21          | Restricted                         |           |          |
|            | USE  | 22          | Joint Military/Civilian            |           |          |
|            | USE  | 23          | International                      |           |          |
|            | USE  | 24          | Unidentified Aircraft Landing Area |           |          |
|            | USE  | 25          | Federal                            |           |          |
|            | USE  | 26          | Primary/1st Order                  |           |          |

|     |     |                                   |
|-----|-----|-----------------------------------|
| USE | 30  | Secondary/2nd Order               |
| USE | 31  | Tertiary/3rd Order                |
| USE | 32  | Insular                           |
| USE | 33  | Provincial                        |
| USE | 37  | Interstate                        |
| USE | 41  | Industrial                        |
| USE | 42  | Commercial                        |
| USE | 43  | Institutional                     |
| USE | 44  | Residential                       |
| USE | 45  | Agricultural                      |
| USE | 48  | Decoy                             |
| USE | 49  | Civilian/Public                   |
| USE | 50  | Limited                           |
| USE | 51  | Telegraph                         |
| USE | 52  | Telephone                         |
| USE | 53  | Power                             |
| USE | 57  | Marine                            |
| USE | 60  | Avalanche                         |
| USE | 61  | Refugee                           |
| USE | 62  | Prisoner                          |
| USE | 68  | Animal sanctuary                  |
| USE | 69  | Levee/Dike                        |
| USE | 70  | Reserve/Reservation               |
| USE | 73  | Terminus/Terminal                 |
| USE | 74  | Low Altitude enroute              |
| USE | 75  | High Altitude Enroute             |
| USE | 76  | Low and High Altitude Enroute     |
| USE | 77  | Short Take-off Landing Approach   |
| USE | 78  | Visual Approach                   |
| USE | 79  | Non-Precision Instrument Approach |
| USE | 80  | Precision Instrument Approach     |
| USE | 81  | Entry                             |
| USE | 82  | Exit                              |
| USE | 83  | Transaction                       |
| USE | 84  | Feeder                            |
| USE | 85  | Initial Approach Fix              |
| USE | 86  | Final Approach Fix                |
| USE | 87  | Visual Descent Point              |
| USE | 88  | Missed Approach Point             |
| USE | 89  | Radar                             |
| USE | 90  | Mileage Break Down                |
| USE | 91  | NAVAID Changeover                 |
| USE | 92  | Altimeter Change                  |
| USE | 93  | Compulsory Reporting Points       |
| USE | 94  | Non-Compulsory Reporting Points   |
| USE | 95  | Alert Apron/Hardstand             |
| USE | 96  | Operational Apron/Hardstand       |
| USE | 97  | Hanger/Apron                      |
| USE | 98  | Base Flight Apron                 |
| USE | 99  | Engine Test Pad/Apron             |
| USE | 100 | Transient Apron                   |
| USE | 101 | Depot Apron                       |
| USE | 102 | Stub Apron                        |
| USE | 103 | Dispersal Hardstand               |

|     |     |   |
|-----|-----|---|
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

**WID Width**

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**Underwater Bottom Feature Class**

ID

**F-CODE/DESCRIPTION***UB010 Bottom**UB020 Shelf***ARA****Area Coverage**

The absolute area within the delineation of the feature.

ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

**BCT****Bottom Configuration Type**

The type of configuration of underwater bottom topography.

|        |                             |
|--------|-----------------------------|
| BCT 1  | Double Break in Slope       |
| BCT 2  | Break in Slope              |
| BCT 3  | Depression, Flat Bottom     |
| BCT 4  | Depression, Steep Sided     |
| BCT 5  | Depression, V-Shaped        |
| BCT 6  | Depression, Sediment Filled |
| BCT 7  | Elevation, Flat Topped      |
| BCT 8  | Elevation, Peaked           |
| BCT 9  | Elevation, Rounded          |
| BCT 10 | Slumped Blocks              |
| BCT 11 | Scarp, Probably Faulted     |
| BCT 12 | Slump Debris                |
| BCT 13 | Step                        |
| BCT 14 | Terrace                     |

**BMC****Bottom Material Category**

Predominant material composition of the bottom of a body of water.

|        |                    |
|--------|--------------------|
| BMC 0  | Unknown            |
| BMC 1  | Clay and Silt      |
| BMC 2  | Silty Sands        |
| BMC 3  | Sand and Gravel    |
| BMC 4  | Gravel and Cobble  |
| BMC 5  | Rocks and Boulders |
| BMC 6  | Bedrock            |
| BMC 7  | Paved              |
| BMC 8  | Peat               |
| BMC 9  | Sand over mud      |
| BMC 10 | Mixed qualities    |
| BMC 11 | Coral              |
| BMC 12 | Slash              |
| BMC 13 | Seamount           |
| BMC 14 | Sand               |

**BRA****Bottom Return Classification**

Tabulates bottom return attributes.

|       |            |
|-------|------------|
| BRA 1 | Classified |
| BRA 2 | Detected   |
| BRA 3 | Identified |

**BRI****Bottom Return Identity Classification**

Tabulates bottom return identity.

BRI 1 Unknown

BRI 2 Neutral

**BRO Bottom Return Obstacle Classification**

Tabulates bottom return obstacles.

BRO 1 Classified

BRO 2 Detected

BRO 3 Identified

**BRW Bottom Return Wreck Classification**

Tabulates bottom return wreck.

BRW 1 Classified

BRW 2 Detected

BRW 3 Identified

**BTC Bottom Thickness Category(Index or category)**

General depth of soil or surface material.

BTC 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**CCC Color Code Category**

Color of the feature.

CCC 0 Unknown/Not applicable

CCC 1 Black

CCC 2 Blue

CCC 3 Brown

CCC 4 Gray

CCC 5 Green

CCC 7 Chocolate

CCC 9 Orange

CCC 12 Red

CCC 14 Violet

CCC 15 White

CCC 19 Yellow

CCC 47 Magenta

CCC 48 Amber

CCC 49 Buff

CCC 51 Bluegreen

CCC 52 Bright Blue

CCC 53 Aqua

CCC 55 Bright Green

CCC 58 Bright Yellow

CCC 61 Bright Red

CCC 63 Cyan

CCC 64 Purple

CCC 69 Pink

CCC 70 Lavender

CCC 999 Other

**CIC Color Intensity Category**

Identifies the intensity of color.

CIC 0 Unknown

|     |     |       |
|-----|-----|-------|
| CIC | 1   | Dark  |
| CIC | 2   | Light |
| CIC | 999 | Other |

**CSM**      **Secondary Material Characteristics**  
**Characteristics of secondary material composition of feature.**

|     |    |                        |
|-----|----|------------------------|
| CSM | 0  | Unknown                |
| CSM | 1  | Broken                 |
| CSM | 2  | Coarse                 |
| CSM | 3  | Decayed                |
| CSM | 4  | Fine, Minute Particles |
| CSM | 5  | Gritty                 |
| CSM | 6  | Hard                   |
| CSM | 7  | Rotten                 |
| CSM | 8  | Soft                   |
| CSM | 9  | Sticky                 |
| CSM | 10 | Stiff                  |
| CSM | 11 | Streaky                |
| CSM | 12 | Tenacious              |
| CSM | 13 | Uneven                 |
| CSM | 17 | Calcareous             |
| CSM | 18 | Flinty                 |
| CSM | 19 | Glacial                |
| CSM | 20 | Ground                 |
| CSM | 21 | Large                  |
| CSM | 22 | Rocky                  |
| CSM | 23 | Small                  |
| CSM | 24 | Speckled               |
| CSM | 25 | Varied                 |
| CSM | 26 | Volcanic               |
| CSM | 27 | Medium                 |

**GRS**      *Gray Scale value*  
A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.  
(May be helpful for IR and NVG simulations; TBD)  
GRS    0-255

**MCS**      **Material Composition Secondary**  
**Secondary material composition of the feature.**

|     |    |              |
|-----|----|--------------|
| MCS | 0  | Unknown      |
| MCS | 4  | Ash          |
| MCS | 8  | Boulders     |
| MCS | 12 | Chalk        |
| MCS | 14 | Cinders      |
| MCS | 15 | Cirripedia   |
| MCS | 16 | Clay         |
| MCS | 18 | Cobble       |
| MCS | 24 | Coral        |
| MCS | 25 | Coral Head   |
| MCS | 28 | Diatoms      |
| MCS | 36 | Foraminifera |
| MCS | 37 | Funus        |
| MCS | 41 | Globigerina  |



|     |     |               |
|-----|-----|---------------|
| MCS | 45  | Grass /Thatch |
| MCS | 46  | Gravel        |
| MCS | 48  | Ground        |
| MCS | 52  | Lava          |
| MCS | 58  | Madrepores    |
| MCS | 59  | Manganese     |
| MCS | 61  | Marl          |
| MCS | 63  | Mattes        |
| MCS | 65  | Mud           |
| MCS | 66  | Mussels       |
| MCS | 69  | Ooze          |
| MCS | 70  | Oysters       |
| MCS | 73  | Pebbles       |
| MCS | 75  | Polyzoa       |
| MCS | 78  | Pteropods     |
| MCS | 79  | Pumice        |
| MCS | 80  | Quartz        |
| MCS | 81  | Radiolaria    |
| MCS | 84  | Rock /Rocky   |
| MCS | 88  | Sand          |
| MCS | 90  | Schist        |
| MCS | 92  | Scoria        |
| MCS | 93  | Sea Tangle    |
| MCS | 94  | Seaweed       |
| MCS | 96  | Shells        |
| MCS | 98  | Shingle       |
| MCS | 99  | Silt          |
| MCS | 105 | Spicules      |
| MCS | 106 | Sponge        |
| MCS | 108 | Stone         |
| MCS | 111 | Tufa          |

MCU Underlying material composition of feature.

|     |    |               |
|-----|----|---------------|
| MCU | 0  | Unknown       |
| MCU | 4  | Ash           |
| MCU | 8  | Boulders      |
| MCU | 12 | Chalk         |
| MCU | 14 | Cinders       |
| MCU | 15 | Cirripedia    |
| MCU | 16 | Clay          |
| MCU | 18 | Cobble        |
| MCU | 24 | Coral         |
| MCU | 25 | Coral Head    |
| MCU | 28 | Diatoms       |
| MCU | 36 | Foraminifera  |
| MCU | 37 | Fucus         |
| MCU | 41 | Globigerina   |
| MCU | 45 | Grass /Thatch |
| MCU | 46 | Gravel        |
| MCU | 48 | Ground        |
| MCU | 52 | Lava          |
| MCU | 58 | Madrepores    |
| MCU | 59 | Manganese     |
| MCU | 61 | Marl          |

|     |     |             |
|-----|-----|-------------|
| MCU | 63  | Mattes      |
| MCU | 65  | Mud         |
| MCU | 66  | Mussels     |
| MCU | 69  | Ooze        |
| MCU | 70  | Oysters     |
| MCU | 73  | Pebbles     |
| MCU | 75  | Polyzoa     |
| MCU | 78  | Pteropods   |
| MCU | 79  | Pumice      |
| MCU | 80  | Quartz      |
| MCU | 81  | Radiolaria  |
| MCU | 84  | Rock /Rocky |
| MCU | 88  | Sand        |
| MCU | 90  | Schist      |
| MCU | 92  | Scoria      |
| MCU | 93  | Sea Tangle  |
| MCU | 94  | Seaweed     |
| MCU | 96  | Shells      |
| MCU | 98  | Shingle     |
| MCU | 99  | Silt        |
| MCU | 105 | Spicules    |
| MCU | 106 | Sponge      |
| MCU | 108 | Stone       |
| MCU | 111 | Tufa        |

#### *NBO*

#### *Nombos*

Density category for bottom clutter which may give mine-like responses on minehunting sonars.

|     |   |                        |
|-----|---|------------------------|
| NBO | 0 | None                   |
| NBO | 1 | Low clutter density    |
| NBO | 2 | Medium clutter density |
| NBO | 3 | High clutter density   |

#### *PSC*

#### Principal characteristic(s) of the *bottom*.

|     |    |                        |
|-----|----|------------------------|
| PSC | 0  | Unknown                |
| PSC | 1  | Broken                 |
| PSC | 2  | Coarse                 |
| PSC | 3  | Decayed                |
| PSC | 4  | Fine, minute particles |
| PSC | 5  | Gritty                 |
| PSC | 6  | Hard                   |
| PSC | 7  | Rotten                 |
| PSC | 8  | Soft                   |
| PSC | 9  | Sticky                 |
| PSC | 10 | Stiff                  |
| PSC | 11 | Streaky                |
| PSC | 12 | Tenacious              |
| PSC | 13 | Uneven                 |
| PSC | 14 | Bare/cleared           |
| PSC | 15 | Karst                  |
| PSC | 16 | Membrane               |
| PSC | 17 | Calcareous             |
| PSC | 18 | Flinty                 |
| PSC | 19 | Glacial                |

|     |     |                   |
|-----|-----|-------------------|
| PSC | 20  | Ground            |
| PSC | 21  | Large             |
| PSC | 22  | Rocky             |
| PSC | 23  | Small             |
| PSC | 24  | Speckled          |
| PSC | 25  | Varied            |
| PSC | 26  | Volcanic          |
| PSC | 27  | Medium            |
| PSC | 28  | Springs in Seabed |
| PSC | 29  | Mobile Bottom     |
| PSC | 99  | Medium            |
| PSC | 999 | Other             |

*PWC*      *Percent Water Content*  
Water content of the bottom.

*RSS*      *Ratio Sound Speed*  
Ratio of sediment sound speed to water sound speed.

*SGS*      *Sand Grain Size*  
Mean grain size

*SLC*      *Sediment Layer Conductivity*

*SRH*      *Sand Ridge Height(ft.)*

*SSD*      *Sediment Surface Density*

*SSG*      *Sound Speed Gradient*  
Sediment sound speed gradient ( at water-sediment interface)

*SSS*      *Sediment Shear Strength*

*TXT*      Text Attribute  
Narrative or other description.

|              |               |              |                  |                 |  |
|--------------|---------------|--------------|------------------|-----------------|--|
| <i>TXT</i>   | 0             | Actual Value |                  |                 |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |  |
|              | Text String   | Lexical      |                  | 256             |  |

*UMC*      Characteristics of underlying material composition of feature.

|     |    |                        |
|-----|----|------------------------|
| UMC | 0  | Unknown                |
| UMC | 2  | Coarse                 |
| UMC | 3  | Decayed                |
| UMC | 4  | Fine, Minute Particles |
| UMC | 5  | Gritty                 |
| UMC | 6  | Hard                   |
| UMC | 7  | Rotten                 |
| UMC | 8  | Soft                   |
| UMC | 9  | Sticky                 |
| UMC | 10 | Stiff                  |
| UMC | 11 | Streaky                |
| UMC | 12 | Tenacious              |
| UMC | 13 | Uneven                 |
| UMC | 17 | Calcareous             |

|     |    |          |
|-----|----|----------|
| UMC | 18 | Flinty   |
| UMC | 19 | Glacial  |
| UMC | 20 | Ground   |
| UMC | 21 | Large    |
| UMC | 22 | Rocky    |
| UMC | 23 | Small    |
| UMC | 24 | Speckled |
| UMC | 25 | Varied   |
| UMC | 26 | Volcanic |
| UMC | 27 | Medium   |

### Beach Feature Class

ID

F-CODE/DESCRIPTION

BA050 Beach

*ABS*

*Absorptivity*

Ratio of radiant (thermal) energy to the energy incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

*AFA*

Facilities available at or in the near vicinity.

|     |     |                  |
|-----|-----|------------------|
| AFA | 0   | Unknown          |
| AFA | 1   | Visitors Berth   |
| AFA | 2   | Visitors Mooring |
| AFA | 3   | Sailmaker        |
| AFA | 4   | Chandler         |
| AFA | 5   | Provisions       |
| AFA | 6   | Physician/Doctor |
| AFA | 7   | Pharmacy/Chemist |
| AFA | 8   | Drinking Water   |
| AFA | 9   | Fuel Station     |
| AFA | 10  | Electricity      |
| AFA | 11  | Bottle Gas/LPG   |
| AFA | 12  | Showers          |
| AFA | 13  | Laundrette       |
| AFA | 14  | Toilets          |
| AFA | 15  | Post Box         |
| AFA | 16  | Public Telephone |
| AFA | 17  | Refuse Bin       |
| AFA | 18  | Water Police     |
| AFA | 19  | Helipad          |
| AFA | 20  | Ticket Sales     |
| AFA | 21  | No Ticket Sales  |
| AFA | 22  | Yatch Club       |
| AFA | 23  | Boat Hoist       |
| AFA | 24  | Boat Yard        |
| AFA | 25  | Public Inn       |
| AFA | 26  | Restaurant       |
| AFA | 999 | Other            |

*ARA*

Area Coverage Attribute

The absolute area within the delineation of the feature.

| ARA        | 0             | Actual Value |                  |          |
|------------|---------------|--------------|------------------|----------|
| Units      | Format        | Range        | Increment        | Max Char |
| Sq. Meters | Short Integer | 0±32,767     | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767     | 1 HA             |          |

#### BIT

##### Beach Indicator Type

|     |   |   |
|-----|---|---|
| BIT | 0 | Unknown   |
| BIT | 1 | Nearshore   |
| BIT | 2 | Foreshore - That part of the shore or beach which lies between the low water mark and the coastline/shoreline. The same condition may exist in non-contiguous off-shore |
| BIT | 3 | Backshore   |

#### CCC

##### Color Code Category

Color of the feature.

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

#### CIC

##### Color Intensity Category

Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

#### DFR

##### Diffuse Reflectance

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**DY1**      *Directivity*  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      *Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      *Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

**EMY**      *Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**EXI**      *Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

**EXS**      *Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |
| EXS | 12 | Alternate          |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

GSC      Ground Slope Category  
Range indicating the slope of ground within delineated area of feature usually manually derived, reported in percent.

|     |    |  |
|-----|----|--|
| GSC | 1  | 0->45 Culturally or Naturally Dissected Land |
| GSC | 2  | ≤ 30   |
| GSC | 3  | >3 and ≤10                                   |
| GSC | 4  | >10 and ≤20                                  |
| GSC | 5  | >20 and ≤30                                  |
| GSC | 6  | >30 and ≤45                                  |
| GSC | 7  | >45  |
| GSC | 8  | >10 and ≤15                                  |
| GSC | 9  | >15 and ≤20                                  |
| GSC | 10 | >45 and ≤60                                  |
| GSC | 11 | >60  |
| GSC | 12 | >60 and ≤85                                  |
| GSC | 13 | >85  |

HFC Hydrological Form Category  
Form or configuration of the *associated* hydrological feature.

|     |     |                                     |
|-----|-----|-------------------------------------|
| HFC | 0   | Unknown                             |
| HFC | 1   | Channelized Stream                  |
| HFC | 2   | Disappearing                        |
| HFC | 7   | Non-Tidal                           |
| HFC | 8   | Normal Channel                      |
| HFC | 10  | Tidal /Tidal Fluctuating            |
| HFC | 14  | Braided                             |
| HFC | 16  | Dissipating                         |
| HFC | 19  | Gorge                               |
| HFC | 21  | Wadi/Wash                           |
| HFC | 30  | Disappearing in sinkhole            |
| HFC | 31  | Disappearing in other than sinkhole |
| HFC | 32  | Oxbow                               |
| HFC | 33  | Split stream                        |
| HFC | 999 | Other                               |

LLE *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T  
LLE F

LLL *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features

LLL T  
LLL F

LN1 *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2 *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3 *Layer Number (Radar)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |



| MAC    | Maritime Area Category                        |  |
|--------|---|--|
| MAC 0  | Unknown                                       |  |
| MAC 1  | Customs Area                                  |  |
| MAC 2  | Dredged Channel/ Dredged Area                 |  |
| MAC 3  | Harbor Area                                   |  |
| MAC 4  | Mine Danger Area                              |  |
| MAC 5  | Prohibited Shipping Area/Entry Prohibited     |  |
| MAC 6  | Reclamation Area                              |  |
| MAC 7  | Restricted Area                               |  |
| MAC 9  | Works in progress area                        |  |
| MAC 10 | Wire Drag Area/Swept Area                     |  |
| MAC 11 | Anchorage (general)                           |  |
| MAC 12 | Anchoring Berths                              |  |
| MAC 13 | Explosive anchorage                           |  |
| MAC 14 | Large Vessel/Deep Water/Deep Draft anchorage. |  |
| MAC 15 | Anchoring Prohibited                          |  |
| MAC 16 | Quarantine anchorage                          |  |
| MAC 17 | Reserved Anchorage                            |  |
| MAC 18 | Small Vessel Anchorage/Marina                 |  |
| MAC 19 | Tanker Anchorage                              |  |
| MAC 20 | Submarine Cable Area                          |  |
| MAC 21 | Pipeline Area                                 |  |
| MAC 22 | Fishing Prohibited                            |  |
| MAC 23 | Cable and Pipeline Area                       |  |
| MAC 24 | Turning Area / Swinging Circle                |  |
| MAC 25 | Spoil Area / Spoil Ground                     |  |
| MAC 26 | Unsurveyed Area                               |  |
| MAC 27 | Submarine Exercise Area                       |  |
| MAC 28 | Mine Laying Practice Area                     |  |
| MAC 29 | Firing Danger Area                            |  |
| MAC 30 | Dumping Ground for Hazardous Materials        |  |
| MAC 31 | Incineration Area                             |  |
| MAC 32 | Oil field                                     |  |
| MAC 33 | Gas Field                                     |  |
| MAC 34 | Historic Wreck                                |  |
| MAC 35 | Explosive Dumping Ground                      |  |
| MAC 36 | Former Mine Danger Area                       |  |
| MAC 37 | Safety Zone                                   |  |
| MAC 38 | Chemical field                                |  |
| MAC 39 | Separation Zone                               |  |
| MAC 40 | Roundabout Zone (TSS)                         |  |
| MAC 41 | Inshore Traffic Zone (TSS)                    |  |
| MAC 42 | Precautionary Area                            |  |
| MAC 43 | Areas to be avoided                           |  |
| MAC 44 | Degaussing Range                              |  |
| MAC 45 | Outfall area                                  |  |
| MAC 46 | Intake area                                   |  |
| MAC 47 | Fish Haven/Protected Area                     |  |
| MAC 48 | Pilot Boarding Area                           |  |
| MAC 49 | Cargo Transshipment Area                      |  |
| MAC 50 | Red Rocks                                     |  |
| MAC 51 | Laterite                                      |  |
| MAC 52 | Evaporites                                    |  |
| MAC 53 | Seaplane                                      |  |

|     |     |                                |
|-----|-----|--------------------------------|
| MAC | 54  | Time Limited                   |
| MAC | 55  | Fairway                        |
| MAC | 56  | Fish Trap Area                 |
| MAC | 57  | Marine farm                    |
| MAC | 58  | Dredging area                  |
| MAC | 61  | Sewer Area                     |
| MAC | 79  | Free Port Area                 |
| MAC | 80  | Fish Sanctuary                 |
| MAC | 81  | Degaussing Range               |
| MAC | 82  | Development Area               |
| MAC | 83  | Diving prohibited zone         |
| MAC | 84  | Danger of stranding area       |
| MAC | 85  | Navigational aid safety zone   |
| MAC | 86  | Historic wreck restricted area |
| MAC | 87  | Seal sanctuary                 |
| MAC | 88  | Game preserve                  |
| MAC | 89  | Bird sanctuary                 |
| MAC | 90  | Nature preserve                |
| MAC | 91  | Practice area in general       |
| MAC | 92  | Torpedo practice area          |
| MAC | 93  | Anchorage for up to 24 hours   |
| MAC | 94  | Small craft mooring area       |
| MAC | 95  | Seaplane anchorage             |
| MAC | 96  | Unrestricted anchorage         |
| MAC | 97  | Crossing (TSS)                 |
| MAC | 98  | Offshore Production Area       |
| MAC | 99  | Dock Area                      |
| MAC | 999 | Other                          |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

| Units       | Format  | Range | Increment | Max Chars |
|-------------|---------|-------|-----------|-----------|
| Text String | Lexical |       |           | 80        |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

OIT 1 SELF

OIT 2 SUN

OIT 3 NOSUN

RFL

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SER

*Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

SDO

Sand Dune Orientation

Characteristic alignment of the dune as caused by the prevailing winds.

| SDO     | 0             | Actual Value |           |          |
|---------|---------------|--------------|-----------|----------|
| Units   | Format        | Range        | Increment | Max Char |
| Degrees | Short Integer | 0-359        | 1 DEG     |          |

SGC

Gradient/Slope

Percentage of slope. (i.e. The change in height divided by the horizontal distance over which the change takes place, times one hundred ((h2-h1)/d) 100.)

| SGC     | 0             | Actual Value |           |          |
|---------|---------------|--------------|-----------|----------|
| Units   | Format        | Range        | Increment | Max Char |
| Percent | Short Integer | 0-100        | 1 %       |          |

SHO

Shoreline Category

Tabulates the topography and material types likely to be found on a shoreline.

|     |   |                        |
|-----|---|------------------------|
| SHO | 1 | Hillocks               |
| SHO | 2 | Flat                   |
| SHO | 3 | Sandy                  |
| SHO | 4 | Stony or shingly shore |
| SHO | 5 | Artificial             |

SLT

Shoreline Type Category

The physical characteristic of the shoreline area.

|     |    |                |
|-----|----|----------------|
| SLT | 0  | Unknown        |
| SLT | 6  | Mangrove/Nipa  |
| SLT | 8  | March, Swamp   |
| SLT | 10 | Rocky          |
| SLT | 11 | Rubble         |
| SLT | 13 | Sandy          |
| SLT | 14 | Stony, Shingly |
| SLT | 15 | Other          |

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 18 | Evaporites               |
| SMS | 19 | Alkali                   |
| SMS | 20 | Asphalt                  |
| SMS | 21 | Ash                      |
| SMS | 22 | Basalt                   |
| SMS | 23 | Bedrock                  |
| SMS | 24 | Boulders                 |
| SMS | 25 | Calcareous               |
| SMS | 26 | Chalk                    |
| SMS | 27 | Cinders                  |
| SMS | 28 | Cirripedia               |
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |

|     |     |                     |
|-----|-----|---------------------|
| SMS | 75  | Reinforced Concrete |
| SMS | 76  | Rock/Rocky          |
| SMS | 77  | Rubber              |
| SMS | 78  | Rubble              |
| SMS | 79  | Salt                |
| SMS | 80  | Sand                |
| SMS | 81  | Sandstone           |
| SMS | 82  | Schist              |
| SMS | 83  | Spoils/Tailings     |
| SMS | 84  | Scoria              |
| SMS | 85  | Sewage              |
| SMS | 86  | Shells              |
| SMS | 87  | Shingle             |
| SMS | 88  | Silt                |
| SMS | 89  | Silver              |
| SMS | 90  | Slag                |
| SMS | 91  | Sludge              |
| SMS | 92  | Snow/Ice            |
| SMS | 93  | Steel               |
| SMS | 94  | Stone               |
| SMS | 95  | Travertin           |
| SMS | 96  | Tufa                |
| SMS | 97  | Uranium             |
| SMS | 98  | Volcanic            |
| SMS | 99  | Volcanic Ash        |
| SMS | 100 | Zinc                |
| SMS | 101 | Distorted surface   |
| SMS | 102 | Sand and gravel     |
| SMS | 103 | Rip-Rap             |
| SMS | 104 | Kelp                |
| SMS | 105 | Sandwaves           |
| SMS | 500 | Not Evaluated       |
| SMS | 999 | Other               |

SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

SPR

Slope Polygon Range

Range indicating the slope of ground within delineated area of feature, reported in percent.

|     |   |               |
|-----|---|---------------|
| SPR | 0 | ≤3            |
| SPR | 1 | >3 and ≤10    |
| SPR | 2 | > 10 and ≤ 15 |
| SPR | 3 | > 15 and ≤ 20 |
| SPR | 4 | > 20 and ≤ 30 |
| SPR | 5 | > 30 and ≤ 45 |
| SPR | 6 | > 45 and ≤ 60 |
| SPR | 7 | > 60 and ≤ 85 |
| SPR | 8 | > 85          |

SRD

Surface Roughness Description

Describes the condition of the surface materials that may be used for mobility prediction, construction material, and landing sites.

|     |    |   |
|-----|----|---|
| SRD | 0  | Unknown   |
| SRD | 1  | No surface roughness effect                                 |
| SRD | 2  | Area of high landslide potential                            |
| SRD | 3  | Uncohesive surface material/flat                            |
| SRD | 4  | Rough   |
| SRD | 5  | Angular   |
| SRD | 6  | Rounded   |
| SRD | 11 | Surface of numerous cobbles and boulders                    |
| SRD | 12 | Areas of stony terrain                                      |
| SRD | 13 | Stony soil with surface rock                                |
| SRD | 14 | Stony soil with scattered boulders                          |
| SRD | 15 | Stony soil with numerous boulders                           |
| SRD | 16 | Numerous boulders   |
| SRD | 17 | Numerous rock outcrops and/or stony soil                    |
| SRD | 18 | Area of scattered boulders                                  |
| SRD | 19 | Talus slope   |
| SRD | 20 | Boulder Fields  |
| SRD | 31 | Highly fractured rock surface                               |
| SRD | 32 | Weathered lava flows  |
| SRD | 33 | Unweathered lava flows                                      |
| SRD | 34 | Stony soil with numerous rock outcrops                      |
| SRD | 35 | Irregular surface with deep fractures of foliation          |
| SRD | 36 | Rugged terrain with numerous rock outcrops                  |
| SRD | 37 | Rugged bedrock surface                                      |
| SRD | 38 | Sand dunes  |
| SRD | 39 | Sand dunes / low  |
| SRD | 40 | Sand dunes/ high  |
| SRD | 41 | Active sand dunes   |
| SRD | 42 | Stabilized sand dunes                                       |
| SRD | 43 | Highly distorted area, sharp rocky ridges                   |
| SRD | 51 | Stony soil cut by numerous gullies                          |
| SRD | 52 | Moderately dissected terrain                                |
| SRD | 53 | Moderately dissected terrain with scattered rock outcrops   |
| SRD | 54 | Dissected floodplain  |
| SRD | 55 | Highly dissected terrain                                    |
| SRD | 56 | Area with deep erosional gullies                            |
| SRD | 57 | Steep, rugged, dissected terrain with narrow gullies        |
| SRD | 58 | Karst/areas of numerous sinkholes and solution valleys      |
| SRD | 59 | Karst/area of numerous sinkholes                            |
| SRD | 60 | Karst/hummocky terrain covered with large conical hills     |
| SRD | 61 | Karst/hummocky terrain covered with low, broad-based mounds |
| SRD | 62 | Arroyo/wadi/wash  |
| SRD | 63 | Playa/dry lake  |
| SRD | 64 | Area of numerous meander scars and/or oxbow lakes           |
| SRD | 65 | Solifluction lobes and frost scars                          |
| SRD | 66 | Hummocky ground, areas of frost heaving                     |
| SRD | 67 | Area of frost polygons                                      |
| SRD | 68 | Area containing sabkhas                                     |
| SRD | 69 | Area of numerous small lakes and ponds                      |
| SRD | 70 | Area of numerous crevasses                                  |

|     |    |   |
|-----|----|---|
| SRD | 81 | Area of numerous terraces                       |
| SRD | 82 | Quarries  |
| SRD | 83 | Strip mines                                     |
| SRD | 84 | Quarry/gravel pit                               |
| SRD | 85 | Quarry/sand pit                                 |
| SRD | 86 | Mine tailings/waste piles                       |
| SRD | 87 | Salt evaporators                                |
| SRD | 88 | Area of numerous dikes                          |
| SRD | 89 | Area of numerous diked fields                   |
| SRD | 90 | Area of numerous fences                         |
| SRD | 91 | Area of numerous stone walls                    |
| SRD | 92 | Area of numerous man-made canals/drains/ditches |
| SRD | 93 | Area of numerous terraced fields                |
| SRD | 94 | Parallel earthen mounds (row crops)             |
| SRD | 95 | Area of numerous hedgerows                      |

*SS1 Sensors Supported*

*SS2*

*SS3* Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*TXT*

Text Attribute

Narrative or other description.

TXT 0 Actual Value

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRA*

Traversability (*indicates traversability by foot*)

TRA 0 Unknown

TRA 1 Traversable

TRA 2 Non-Traversable

TRA 4 Polygon

TRA 5 Pond

TRA 999 Other

*TRL*

*Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*

*Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TTP**      *Texture Type*  
 Type of data contained within a texture map (RGB, intensity, multi spectral,  
 SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

**USE**      *Usage*  
 Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 1  | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 2  | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 3  | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 9  | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |



|     |     |                                   |
|-----|-----|-----------------------------------|
| USE | 53  | Power                             |
| USE | 57  | Marine                            |
| USE | 60  | Avalanche                         |
| USE | 61  | Refugee                           |
| USE | 62  | Prisoner                          |
| USE | 68  | Animal sanctuary                  |
| USE | 69  | Levee/Dike                        |
| USE | 70  | Reserve/Reservation               |
| USE | 73  | Terminus/Terminal                 |
| USE | 74  | Low Altitude enroute              |
| USE | 75  | High Altitude Enroute             |
| USE | 76  | Low and High Altitude Enroute     |
| USE | 77  | Short Take-off Landing Approach   |
| USE | 78  | Visual Approach                   |
| USE | 79  | Non-Precision Instrument Approach |
| USE | 80  | Precision Instrument Approach     |
| USE | 81  | Entry                             |
| USE | 82  | Exit                              |
| USE | 83  | Transaction                       |
| USE | 84  | Feeder                            |
| USE | 85  | Initial Approach Fix              |
| USE | 86  | Final Approach Fix                |
| USE | 87  | Visual Descent Point              |
| USE | 88  | Missed Approach Point             |
| USE | 89  | Radar                             |
| USE | 90  | Mileage Break Down                |
| USE | 91  | NAVAID Changeover                 |
| USE | 92  | Altimeter Change                  |
| USE | 93  | Compulsory Reporting Points       |
| USE | 94  | Non-Compulsory Reporting Points   |
| USE | 95  | Alert Apron/Hardstand             |
| USE | 96  | Operational Apron/Hardstand       |
| USE | 97  | Hanger/Apron                      |
| USE | 98  | Base Flight Apron                 |
| USE | 99  | Engine Test Pad/Apron             |
| USE | 100 | Transient Apron                   |
| USE | 101 | Depot Apron                       |
| USE | 102 | Stub Apron                        |
| USE | 103 | Dispersal Hardstand               |
| USE | 104 | Pad Hardstand                     |
| USE | 105 | Refueling Hardstand               |
| USE | 106 | Parking Hardstand                 |
| USE | 107 | Engine Run-up Hardstand           |
| USE | 108 | Firing-In Hardstand               |
| USE | 109 | Compass Rose Hardstand            |
| USE | 110 | Maintenance Hardstand             |
| USE | 111 | Quaternary/4th Order              |
| USE | 112 | Quinary/5th Order                 |
| USE | 113 | Regional                          |
| USE | 114 | Communal                          |
| USE | 117 | Outfall                           |
| USE | 118 | Intake                            |
| USE | 119 | Berthing of vessels               |
| USE | 120 | Recreational                      |

|     |     |   |
|-----|-----|---|
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

#### VDC

#### Vertical Datum Category

The reference line (0 elevation) from which heights and depths are measured.

|     |    |                                |
|-----|----|--------------------------------|
| VDC | 0  | Unknown                        |
| VDC | 1  | VALUE INTENTIONALLY LEFT BLANK |
| VDC | 2  | High Water                     |
| VDC | 3  | Higher High Water              |
| VDC | 4  | Indian Spring Low Water        |
| VDC | 5  | Low Water                      |
| VDC | 6  | Lower Low Water                |
| VDC | 7  | Mean High Water                |
| VDC | 8  | Mean High Water Neaps          |
| VDC | 9  | Mean High Water Springs        |
| VDC | 10 | Mean Higher High Water         |
| VDC | 11 | Mean Low Water                 |
| VDC | 12 | Mean Low Water Neaps           |
| VDC | 13 | Mean Low Water Springs         |
| VDC | 14 | Mean Lower Low Water           |
| VDC | 15 | Mean Sea Level                 |
| VDC | 16 | Mean Tide Level                |
| VDC | 17 | Neap Tide                      |
| VDC | 18 | Spring Tide                    |
| VDC | 19 | Mean Lower Low Water Springs   |
| VDC | 20 | Lowest Astronomical Tide       |
| VDC | 21 | Chart Datum (Unspecified)      |
| VDC | 22 | Highest Astronomical Tide      |
| VDC | 24 | Mean Higher Water              |
| VDC | 26 | Highest Normal High Water      |

|     |     |                                      |
|-----|-----|--------------------------------------|
| VDC | 28  | Highest High Water                   |
| VDC | 30  | Indian Spring High Water             |
| VDC | 90  | Lowest low water                     |
| VDC | 91  | Lowest low water springs             |
| VDC | 92  | Approximate mean low water springs   |
| VDC | 93  | Low water springs                    |
| VDC | 94  | Approximate lowest astronomical tide |
| VDC | 95  | Nearly lowest low water              |
| VDC | 96  | Approximate mean low water           |
| VDC | 97  | Approximate mean lower low water     |
| VDC | 98  | Approximate mean sea level           |
| VDC | 99  | High water springs                   |
| VDC | 999 | Other                                |

**WD4 Wet Gap Width**

The wet gap width at low tide (in meters).

WD4 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**WLE Water Level Effect**

Encodes the possible effects of the surrounding water.

|     |   |                                |
|-----|---|--------------------------------|
| WLE | 0 | Unknown                        |
| WLE | 1 | Partly submerged at high water |
| WLE | 2 | Always dry                     |
| WLE | 3 | Always under water/submerged   |
| WLE | 4 | Covers and uncovers            |
| WLE | 5 | Awash                          |
| WLE | 6 | Drying                         |

**Permanent Ice Feature Class**

**ID**

**F-CODE/DESCRIPTION**

BJ040 Ice Cliff  
 BJ060 Ice Peak/Nunatak  
 BJ020 Moraine  
 BJ030 Glacier  
 BJ065 Ice Shelf  
 BJ070 Pack Ice  
 BJ080 Polar ice  
 BJ100 Snow Field/Ice Field  
 BJ110 Tundra  
 SA040 Permanent Snowfield - An area permanently covered by snow or ice that covers a land mass, such as glaciers and snowfields

**ABS**

**Absorptivity**

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**ARA**

**Area Coverage**

The absolute area within the delineation of the feature.

|            |   |               |          |                  |          |
|------------|---|---------------|----------|------------------|----------|
| ARA        | 0 | Actual Value  |          |                  |          |
| Units      |   | Format        | Range    | Increment        | Max Char |
| Sq. Meters |   | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   |   | Short Integer | 0±32,767 | 1 HA             |          |

#### AOO Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|         |               |              |       |           |           |
|---------|---------------|--------------|-------|-----------|-----------|
| AOO     | 0             | Actual Value |       |           |           |
| Units   |               | Format       | Range | Increment | Max Chars |
| Degrees | Short Integer |              | 0-360 | 1 DEG     |           |

#### ATN Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

#### CCC Color Code Category

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

#### CIC Color Intensity Category

Identifies the intensity of color.

|     |   |         |
|-----|---|---------|
| CIC | 0 | Unknown |
|-----|---|---------|

|     |     |       |
|-----|-----|-------|
| CIC | 1   | Dark  |
| CIC | 2   | Light |
| CIC | 999 | Other |

# COC

## Conspicuous Category

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

# DFR

## Diffuse Reflectance

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

# DY1

## Directivity

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

# DY2

## Directivity (IR)

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

# DY3

## Directivity (Radar)

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |

EXS 999 Other

**FOT** *Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

**HGT** *Height Above Surface Level*

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**GRS** *Gray Scale value*

A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity. (May be helpful for IR and NVG simulations; TBD)

GRS 0-255

**ICC** *Ice Category Classification*

Tabulates the kind of ice.

|     |     |                       |
|-----|-----|-----------------------|
| ICC | 0   | Undefined             |
| ICC | 1   | Fast ice              |
| ICC | 2   | Sea ice               |
| ICC | 3   | Growler area          |
| ICC | 4   | Pancake ice           |
| ICC | 5   | Glacier (see BJ030)   |
| ICC | 6   | Ice Peak (see BJ060)  |
| ICC | 7   | Pack ice (see BJ070)  |
| ICC | 8   | Polar ice (see BJ080) |
| ICC | 9   | Debris-covered        |
| ICC | 999 | Other                 |

**IMC** *Internal Material Category*

Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

**LEN** *Length/Diameter of Point Feature*

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE** *Low Level Effects*

Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T

LLE F

LLL

Long Linear

Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T

LLL F

LN1

Layer Number

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

Units

Format

Range

Increment

Max Char

Integer

0.. 2147483647

LN2

Layer Number (IR)

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

Units

Format

Range

Increment

Max Char

Integer

0.. 2147483647

LN3

Layer Number (Radar)

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

Units

Format

Range

Increment

Max Char

Integer

0.. 2147483647

NAM

Name

Any Identifier or code.

NAM

0

Actual Value

Units

Format

Range

Increment

Max Chars

Text String

Lexical

80

OIT

Object Illumination Type

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

OIT

1

SELF

OIT

2

SUN

OIT

3

NOSUN

PRC

Periodic Restriction Category

Restriction due to climate or other limitations.

PRC

1

Perennially Open, Not Subject to Ice

PRC

2

Subject to Ice

PRC

3

Permanent Ice

PRC

4

Seasonal limit - Jan.

PRC

5

Seasonal limit - Feb.

PRC

6

Seasonal limit - Mar.

PRC

7

Seasonal limit - Apr.



|     |     |                       |
|-----|-----|-----------------------|
| PRC | 8   | Seasonal limit - May  |
| PRC | 9   | Seasonal limit - Jun. |
| PRC | 10  | Seasonal limit - Jul. |
| PRC | 11  | Seasonal limit - Aug. |
| PRC | 12  | Seasonal limit - Sep. |
| PRC | 13  | Seasonal limit - Oct. |
| PRC | 14  | Seasonal limit - Nov. |
| PRC | 15  | Seasonal limit - Dec. |
| PRC | 16  | Closed                |
| PRC | 999 | Other                 |

#### RFL

##### *Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

#### SER

##### *Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

#### SIC

##### *Snow/Ice Category*

Indicates the composition of the feature.

SIC 1 Snow

SIC 2 Ice

#### SMS

##### *Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 25 | Calcareous               |
| SMS | 26 | Chalk                    |
| SMS | 27 | Cinders                  |
| SMS | 28 | Cirripedia               |
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 82  | Schist            |
| SMS | 83  | Spoils/Tailings   |
| SMS | 84  | Scoria            |
| SMS | 85  | Sewage            |
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*THI*      *Thickness Index*  
Predominant thickness within delineation of feature, determined in meters at the greatest concentration along a cross section of the feature (First Range).  
THI    0      Unknown  
THI    1      ≤ 0.8 M  
THI    2      > 0.8 M and ≤1.6 M  
THI    3      > 1.6 M and ≤2.4 M  
THI    4      > 2.4 M  
THI    5      NA

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

|     |   |               |                |                  |                  |
|-----|---|---------------|----------------|------------------|------------------|
| TRL | <i>Translucency</i>   |               |                |                  |                  |
|     | The degree to which a surface is transparent.   |               |                |                  |                  |
|     | Type - Real(6 sd)      Range - 0.0 .. 100.0   |               |                |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real (f7.3)   | 0.0 .. 100.0   |                  |                  |
| TRV | <i>Transmissivity</i>   |               |                |                  |                  |
|     | Ratio of energy transmitted by an object to the amount of energy incident upon it.  |               |                |                  |                  |
|     | Type - Real(6 sd)      Range - 0.0 .. 1.0   |               |                |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real (f7.6)   | 0.0 .. 1.0     |                  |                  |
| TTP | <i>Texture Type</i>   |               |                |                  |                  |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC).  |               |                |                  |                  |
|     | TTP    1      RGB   |               |                |                  |                  |
|     | TTP    2      GRAY  |               |                |                  |                  |
|     | TTP    3      MULTI   |               |                |                  |                  |
|     | TTP    4      SMFD  |               |                |                  |                  |
| TXT | Text Attribute  |               |                |                  |                  |
|     | Narrative or other description.   |               |                |                  |                  |
|     | TXT    0      Actual Value  |               |                |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Text String   | Lexical        |                  | 256              |
| WID | Width   |               |                |                  |                  |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |               |                |                  |                  |
|     | WID    0      Actual Value  |               |                |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters  | Short Integer | 0±32,767       | 1 M              |                  |
| ZV2 | Highest Z-value   |               |                |                  |                  |
|     | Elevation above a given datum to the highest portion of the feature.  |               |                |                  |                  |
|     | ZV2    0      Actual Value  |               |                |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters  | Short Integer | -400 to 30,000 | 1 M              |                  |

#### Basic Earth Surface Void Collection Area Feature Class

ID

F-CODE/DESCRIPTION

ZD020 Void Collection Area

VCA

Void Collection Attribute

Reason data is not collected.

VCA    0      Unknown

VCA    1      Data Not Requested By User

VCA    2      Area Too Rough to Collect

VCA    3      No Available Imagery

VCA    4      Different Height Threshold Within Data Block

|     |     |                              |
|-----|-----|------------------------------|
| VCA | 5   | Low Data Collection Criteria |
| VCA | 6   | No Available Map Source      |
| VCA | 7   | No Suitable Imagery          |
| VCA | 8   | Data Not Required            |
| VCA | 999 | Other                        |

## Appendix C. Data Quality Coverage

### Data Quality Feature Class

ID

F-CODE/DESCRIPTION

ZD020 Void Collection Area  
An area lacking suitable source coverage, or where data is not required.

VCA

Void Collection Attribute

|     |     |  |
|-----|-----|--|
| VCA | 0   | Unknown                                      |
| VCA | 1   | Data Not Requested By User                   |
| VCA | 2   | Area Too Rough to Collect                    |
| VCA | 3   | No Available Imagery                         |
| VCA | 4   | Different Height Threshold Within Data Block |
| VCA | 5   | Low Data Collection Criteria                 |
| VCA | 6   | No Available Map Source                      |
| VCA | 7   | No Suitable Imagery                          |
| VCA | 8   | Data Not Required                            |
| VCA | 999 | Other  |

VCT

Void Collection Type

|     |   |         |
|-----|---|---------|
| VCT | 0 | Unknown |
| VCT | 1 | Relief  |
| VCT | 2 | Other   |

## Appendix D. Demarcation Coverage

### Political Boundary Line Feature Class

ID

#### F-CODE/DESCRIPTION

FA000 Administrative Boundary  
 FA020 Armistice Line  
 FA030 Cease-Fire Line  
 FA040 Claim Line  
 FA050 Mandate Line/Convention Line  
 FA060 Defacto Boundary  
 FA110 International Date Line

ACC

Accuracy Category  
 Accuracy of geographic position.

ACC 0 Unknown  
 ACC 1 Accurate  
 ACC 2 Approximate  
 ACC 3 Doubtful  
 ACC 5 Disputed  
 ACC 6 Undisputed  
 ACC 7 Precise  
 ACC 8 Abrogated

BST

Boundary Status Type

BST 0 Unknown  
 BST 1 Definite  
 BST 2 Indefinite  
 BST 3 In Dispute  
 BST 4 No Defined Boundary

NAM

Name  
 Any Identifier or code.

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

NM3

Name 3 (name of political entity on one side of boundary)  
 Name of the political entity on one side (relative to NM3) of a boundary line.

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 80       |

NM4

Name 4 (name of political entity on other side of boundary)  
 Name of the political entity on the other side of the boundary line.

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 80       |

TXT

Text Attribute  
 Narrative or other description.  
 TXT 0 Actual Value

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

# USE

## Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |



|     |     |   |
|-----|-----|---|
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

### Political Boundary Area Feature Class

#### ID

#### F-CODE/Description

|       |                     |
|-------|---------------------|
| FA001 | Administrative Area |
| FA070 | Demilitarized Zone  |
| FA165 | Training Area       |
| FA170 | Zone of Occupation  |
| FA__  | Sensitivity Area    |
| FC__  | Conflict Areas      |

#### ACC

Accuracy Category  
Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

#### INT

Intensity level

|     |   |                |
|-----|---|----------------|
| INT | 1 | High Intensity |
| INT | 2 | Low Intensity  |

#### NAM

Name  
Any Identifier or code.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| NAM          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|              | Text String   | Lexical      |                  | 80               |

#### NM3

Name 3 (name of political entity on one side of boundary)  
Name of the political entity on one side (relative to NM3) of a boundary line.

|     |   |              |
|-----|---|--------------|
| NM3 | 0 | Actual Value |
|-----|---|--------------|

|     | Units   | Format      | Range                              | Increment | Max Char |
|-----|---|-------------|------------------------------------|-----------|----------|
|     |   | Text String | Lexical                            |           | 80       |
| NM4 | Name 4 (name of political entity on other side of boundary)<br>Name of the political entity on the other side of the boundary line. |             |                                    |           |          |
|     | NM4   | 0           |                                    |           |          |
|     | Units   | Format      | Range                              | Increment | Max Char |
|     |   | Text String | Lexical                            |           | 80       |
| TXT | Text Attribute<br>Narrative or other description.   |             |                                    |           |          |
|     | TXT   | 0           | Actual Value                       |           |          |
|     | Units   | Format      | Range                              | Increment | Max Char |
|     |   | Text String | Lexical                            |           | 256      |
| USE | Usage<br>Use (identifies the primary user, function, or controlling authority).   |             |                                    |           |          |
|     | USE   | 0           | Unknown                            |           |          |
|     | USE   | 4           | National                           |           |          |
|     | USE   | 5           | State                              |           |          |
|     | USE   | 6           | Private                            |           |          |
|     | USE   | 7           | Tribal                             |           |          |
|     | USE   | 8           | Military                           |           |          |
|     | USE   | 10          | Other                              |           |          |
|     | USE   | 11          | Motel/Hotel                        |           |          |
|     | USE   | 12          | Apartment                          |           |          |
|     | USE   | 13          | Open                               |           |          |
|     | USE   | 14          | VALUE INTENTIONALLY LEFT BLANK     |           |          |
|     | USE   | 15          | VALUE INTENTIONALLY LEFT BLANK     |           |          |
|     | USE   | 16          | City                               |           |          |
|     | USE   | 17          | Advertising Billboard              |           |          |
|     | USE   | 18          | Scoreboard                         |           |          |
|     | USE   | 19          | Highway Sign                       |           |          |
|     | USE   | 20          | Closed                             |           |          |
|     | USE   | 21          | Restricted                         |           |          |
|     | USE   | 22          | Joint Military/Civilian            |           |          |
|     | USE   | 23          | International                      |           |          |
|     | USE   | 24          | Unidentified Aircraft Landing Area |           |          |
|     | USE   | 25          | Federal                            |           |          |
|     | USE   | 26          | Primary/1st Order                  |           |          |
|     | USE   | 30          | Secondary/2nd Order                |           |          |
|     | USE   | 31          | Tertiary/3rd Order                 |           |          |
|     | USE   | 32          | Insular                            |           |          |
|     | USE   | 33          | Provincial                         |           |          |
|     | USE   | 37          | Interstate                         |           |          |
|     | USE   | 41          | Industrial                         |           |          |
|     | USE   | 42          | Commercial                         |           |          |
|     | USE   | 43          | Institutional                      |           |          |
|     | USE   | 44          | Residential                        |           |          |
|     | USE   | 45          | Agricultural                       |           |          |
|     | USE   | 48          | Decoy                              |           |          |
|     | USE   | 49          | Civilian/Public                    |           |          |
|     | USE   | 50          | Limited                            |           |          |
|     | USE   | 51          | Telegraph                          |           |          |

|     |     |                                   |
|-----|-----|-----------------------------------|
| USE | 52  | Telephone                         |
| USE | 53  | Power                             |
| USE | 57  | Marine                            |
| USE | 60  | Avalanche                         |
| USE | 61  | Refugee                           |
| USE | 62  | Prisoner                          |
| USE | 68  | Animal sanctuary                  |
| USE | 69  | Levee/Dike                        |
| USE | 70  | Reserve/Reservation               |
| USE | 73  | Terminus/Terminal                 |
| USE | 74  | Low Altitude enroute              |
| USE | 75  | High Altitude Enroute             |
| USE | 76  | Low and High Altitude Enroute     |
| USE | 77  | Short Take-off Landing Approach   |
| USE | 78  | Visual Approach                   |
| USE | 79  | Non-Precision Instrument Approach |
| USE | 80  | Precision Instrument Approach     |
| USE | 81  | Entry                             |
| USE | 82  | Exit                              |
| USE | 83  | Transaction                       |
| USE | 84  | Feeder                            |
| USE | 85  | Initial Approach Fix              |
| USE | 86  | Final Approach Fix                |
| USE | 87  | Visual Descent Point              |
| USE | 88  | Missed Approach Point             |
| USE | 89  | Radar                             |
| USE | 90  | Mileage Break Down                |
| USE | 91  | NAVAID Changeover                 |
| USE | 92  | Altimeter Change                  |
| USE | 93  | Compulsory Reporting Points       |
| USE | 94  | Non-Compulsory Reporting Points   |
| USE | 95  | Alert Apron/Hardstand             |
| USE | 96  | Operational Apron/Hardstand       |
| USE | 97  | Hanger/Apron                      |
| USE | 98  | Base Flight Apron                 |
| USE | 99  | Engine Test Pad/Apron             |
| USE | 100 | Transient Apron                   |
| USE | 101 | Depot Apron                       |
| USE | 102 | Stub Apron                        |
| USE | 103 | Dispersal Hardstand               |
| USE | 104 | Pad Hardstand                     |
| USE | 105 | Refueling Hardstand               |
| USE | 106 | Parking Hardstand                 |
| USE | 107 | Engine Run-up Hardstand           |
| USE | 108 | Firing-In Hardstand               |
| USE | 109 | Compass Rose Hardstand            |
| USE | 110 | Maintenance Hardstand             |
| USE | 111 | Quaternary/4th Order              |
| USE | 112 | Quinary/5th Order                 |
| USE | 113 | Regional                          |
| USE | 114 | Communal                          |
| USE | 117 | Outfall                           |
| USE | 118 | Intake                            |
| USE | 119 | Berthing of vessels               |

|     |     |   |
|-----|-----|---|
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

#### **Topographic Zone Area Feature Class**

##### **ID**

##### **F-Code/Description**

|       |                              |
|-------|------------------------------|
| FA005 | Access Zone                  |
| FA041 | Contact Zone                 |
| FA090 | Geophysical Prospecting Grid |

##### **CSM**

|   |    |                        |
|---|----|------------------------|
| Secondary Material Characteristics.                           |    |                        |
| Characteristics of secondary material composition of feature. |    |                        |
| CSM   | 0  | Unknown                |
| CSM   | 1  | Broken                 |
| CSM   | 2  | Coarse                 |
| CSM   | 3  | Decayed                |
| CSM   | 4  | Fine, Minute Particles |
| CSM   | 5  | Gritty                 |
| CSM   | 6  | Hard                   |
| CSM   | 7  | Rotten                 |
| CSM   | 8  | Soft                   |
| CSM   | 9  | Sticky                 |
| CSM   | 10 | Stiff                  |
| CSM   | 11 | Streaky                |
| CSM   | 12 | Tenacious              |
| CSM   | 13 | Uneven                 |
| CSM   | 17 | Calcareous             |

|     |    |          |
|-----|----|----------|
| CSM | 18 | Flinty   |
| CSM | 19 | Glacial  |
| CSM | 20 | Ground   |
| CSM | 21 | Large    |
| CSM | 22 | Rocky    |
| CSM | 23 | Small    |
| CSM | 24 | Speckled |
| CSM | 25 | Varied   |
| CSM | 26 | Volcanic |
| CSM | 27 | Medium   |

**DMB**      Density Measure (Brush/Undergrowth)  
 Actual percent (%) of ground covered by undergrowth.  
 DMB    0      Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Percent | Short Integer | 0-100 | 1 %       |          |

**DMT**      Density Measure (% of Tree/Canopy Cover)  
 Canopy cover measured by percent within area of feature during the summer season.  
 DMT    0      Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Percent | Short Integer | 0-100 | 1 %       |          |

**EXS**      Existence Category  
 The state or condition of the feature.

|     |    |                         |
|-----|----|-------------------------|
| EXS | 0  | Unknown                 |
| EXS | 1  | Definite                |
| EXS | 2  | Doubtful                |
| EXS | 3  | Reported                |
| EXS | 5  | Under Construction      |
| EXS | 6  | Abandoned/Disused       |
| EXS | 7  | Destroyed               |
| EXS | 10 | Proposed                |
| EXS | 11 | Temporary               |
| EXS | 12 | Alternate               |
| EXS | 18 | Permanent               |
| EXS | 25 | Not Maintained          |
| EXS | 26 | Maintained              |
| EXS | 27 | Closed/Locked           |
| EXS | 28 | Operational             |
| EXS | 30 | Not Isolated            |
| EXS | 31 | Isolated                |
| EXS | 33 | Ruined                  |
| EXS | 35 | Other                   |
| EXS | 44 | Approximate/About       |
| EXS | 45 | Natural                 |
| EXS | 46 | Man-made                |
| EXS | 47 | Swept                   |
| EXS | 48 | Controlled              |
| EXS | 49 | Non-Controlled          |
| EXS | 50 | Non-Tidal               |
| EXS | 51 | Tidal/Tidal Fluctuation |
| EXS | 52 | Dissipating             |

|     |  |               |   |
|-----|--|---------------|---|
|     | EXS  | 53            | Incomplete  |
|     | EXS  | 54            | Antique/Ancient   |
|     | EXS  | 55            | Unexamined/Unsurveyed   |
|     | EXS  | 56            | Unattended/Unwatched  |
|     | EXS  | 59            | Not Usable  |
|     | EXS  | 60            | Indefinite (Shoreline)  |
|     | EXS  | 61            | Definite Shoreline  |
|     | EXS  | 62            | Partially Destroyed   |
|     | EXS  | 65            | Inactive  |
|     | EXS  | 998           | Not Applicable  |
|     | EXS  | 999           | Other   |
| LC1 | Load Class 1   |               |   |
|     | Military load classification (weight bearing capacity) Type 1.   |               |   |
|     | LC1  | 0             | Weight bearing capacity for one-way traffic of wheeled vehicles (from STANAG 2253). |
| LC2 | Load Class Type 2  |               |   |
|     | Military load classification (weight bearing capacity) Type 2.   |               |   |
|     | LC2  | 0             | Weight bearing capacity for two-way traffic of wheeled vehicles (from STANAG 2253). |
| LC3 | Load Class Type 3  |               |   |
|     | Military load classification (weight bearing capacity) Type 3.   |               |   |
|     | LC3  | 0             | Weight bearing capacity for one-way traffic of tracked vehicles (from STANAG 2253). |
| LC4 | Load Class Type 4  |               |   |
|     | Military load classification (weight bearing capacity) Type 4.   |               |   |
|     | LC4  | 0             | Weight bearing capacity for one-way traffic of tracked vehicles (from STANAG 2253). |
| LEN | Length/Diameter of point feature   |               |   |
|     | A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments. |               |   |
|     | LEN  | 0             | Actual Value  |
|     | Units  | Format        | Range   |
|     | Meters   | Short Integer | 0±32,767  |
|     |  |               | Increment   |
|     |  |               | 1 M   |
| MAS | Maintenance Status   |               |   |
|     | Indicates whether the feature is maintained.   |               |   |
|     | MAS  | 1             | Maintained  |
|     | MAS  | 2             | Not Maintained  |
| MCC | Material Composition Category  |               |   |
|     | Characteristics of primary material composition of feature.  |               |   |
|     | MCC  | 0             | Unknown   |
|     | MCC  | 1             | Aircraft  |
|     | MCC  | 2             | Aluminum  |
|     | MCC  | 3             | Ammunition  |
|     | MCC  | 4             | Ash   |
|     | MCC  | 5             | Asphalt   |
|     | MCC  | 6             | Basalt  |
|     | MCC  | 7             | Bedrock   |

|     |    |                       |
|-----|----|-----------------------|
| MCC | 8  | Boulders              |
| MCC | 9  | Brick                 |
| MCC | 10 | Calcareous            |
| MCC | 11 | Cement                |
| MCC | 12 | Chalk                 |
| MCC | 13 | Chemical              |
| MCC | 14 | Cinders               |
| MCC | 15 | Cirripedia            |
| MCC | 16 | Clay                  |
| MCC | 17 | Coal                  |
| MCC | 18 | Cobble                |
| MCC | 19 | Coke                  |
| MCC | 20 | Composition           |
| MCC | 21 | Concrete              |
| MCC | 22 | Conglomerate          |
| MCC | 23 | Copper                |
| MCC | 24 | Coral                 |
| MCC | 25 | Coral Head            |
| MCC | 26 | Desalinated Water     |
| MCC | 27 | Diamonds              |
| MCC | 28 | Diatoms               |
| MCC | 29 | Dolomite              |
| MCC | 30 | Earthen               |
| MCC | 31 | Electric              |
| MCC | 32 | Eroded Lands          |
| MCC | 33 | Explosives            |
| MCC | 34 | Flynch                |
| MCC | 35 | Food                  |
| MCC | 36 | Foraminifera          |
| MCC | 37 | Fucus                 |
| MCC | 38 | Gas                   |
| MCC | 39 | Gasoline              |
| MCC | 40 | Glass                 |
| MCC | 41 | Globigerina           |
| MCC | 42 | Gold                  |
| MCC | 43 | Granite               |
| MCC | 45 | Grass/Thatch          |
| MCC | 46 | Gravel                |
| MCC | 47 | Green Rocks           |
| MCC | 48 | Ground                |
| MCC | 49 | Ground (Shells)       |
| MCC | 50 | Heat                  |
| MCC | 51 | Iron                  |
| MCC | 52 | Lava                  |
| MCC | 54 | Lead                  |
| MCC | 55 | Loess                 |
| MCC | 56 | Lumber                |
| MCC | 57 | Macadam               |
| MCC | 58 | Madrepores            |
| MCC | 59 | Manganese             |
| MCC | 60 | Marble                |
| MCC | 61 | Marl                  |
| MCC | 62 | Masonry (Brick/Stone) |
| MCC | 63 | Mattes                |



|     |     |                      |
|-----|-----|----------------------|
| MCC | 64  | Metal                |
| MCC | 65  | Mud                  |
| MCC | 66  | Mussels              |
| MCC | 67  | Oil                  |
| MCC | 68  | Oil Blister          |
| MCC | 69  | Ooze                 |
| MCC | 70  | Oysters              |
| MCC | 71  | Paper                |
| MCC | 72  | Part Metal           |
| MCC | 73  | Pebbles              |
| MCC | 74  | Plastic              |
| MCC | 75  | Polyzoa              |
| MCC | 76  | Porphyry             |
| MCC | 77  | Prestressed Concrete |
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |

|     |     |            |
|-----|-----|------------|
| MCC | 119 | Evaporites |
| MCC | 999 | Other      |

**MCS**      **Material Composition Secondary**  
**Secondary material composition of feature.**

|     |     |               |
|-----|-----|---------------|
| MCS | 0   | Unknown       |
| MCS | 4   | Ash           |
| MCS | 8   | Boulders      |
| MCS | 12  | Chalk         |
| MCS | 14  | Cinders       |
| MCS | 15  | Cirripedia    |
| MCS | 16  | Clay          |
| MCS | 18  | Cobble        |
| MCS | 24  | Coral         |
| MCS | 25  | Coral Head    |
| MCS | 28  | Diatoms       |
| MCS | 36  | Foraminifera  |
| MCS | 37  | Funus         |
| MCS | 41  | Globigerina   |
| MCS | 45  | Grass /Thatch |
| MCS | 46  | Gravel        |
| MCS | 48  | Ground        |
| MCS | 52  | Lava          |
| MCS | 58  | Madrepores    |
| MCS | 59  | Manganese     |
| MCS | 61  | Marl          |
| MCS | 63  | Mattes        |
| MCS | 65  | Mud           |
| MCS | 66  | Mussels       |
| MCS | 69  | Ooze          |
| MCS | 70  | Oysters       |
| MCS | 73  | Pebbles       |
| MCS | 75  | Polyzoa       |
| MCS | 78  | Pteropods     |
| MCS | 79  | Pumice        |
| MCS | 80  | Quartz        |
| MCS | 81  | Radiolaria    |
| MCS | 84  | Rock /Rocky   |
| MCS | 88  | Sand          |
| MCS | 90  | Schist        |
| MCS | 92  | Scoria        |
| MCS | 93  | Sea Tangle    |
| MCS | 94  | Seaweed       |
| MCS | 96  | Shells        |
| MCS | 98  | Shingle       |
| MCS | 99  | Silt          |
| MCS | 105 | Spicules      |
| MCS | 106 | Sponge        |
| MCS | 108 | Stone         |
| MCS | 111 | Tufa          |

**MCU**      **Material Composition Underlying**  
**Underlying material composition of feature.**

|     |   |         |
|-----|---|---------|
| MCU | 0 | Unknown |
|-----|---|---------|

|     |     |               |
|-----|-----|---------------|
| MCU | 4   | Ash           |
| MCU | 8   | Boulders      |
| MCU | 12  | Chalk         |
| MCU | 14  | Cinders       |
| MCU | 15  | Cirripedia    |
| MCU | 16  | Clay          |
| MCU | 18  | Cobble        |
| MCU | 24  | Coral         |
| MCU | 25  | Coral Head    |
| MCU | 28  | Diatoms       |
| MCU | 36  | Foraminifera  |
| MCU | 37  | Fucus         |
| MCU | 41  | Globigerina   |
| MCU | 45  | Grass /Thatch |
| MCU | 46  | Gravel        |
| MCU | 48  | Ground        |
| MCU | 52  | Lava          |
| MCU | 58  | Madrepores    |
| MCU | 59  | Manganese     |
| MCU | 61  | Marl          |
| MCU | 63  | Mattes        |
| MCU | 65  | Mud           |
| MCU | 66  | Mussels       |
| MCU | 69  | Ooze          |
| MCU | 70  | Oysters       |
| MCU | 73  | Pebbles       |
| MCU | 75  | Polyzoa       |
| MCU | 78  | Pteropods     |
| MCU | 79  | Pumice        |
| MCU | 80  | Quartz        |
| MCU | 81  | Radiolaria    |
| MCU | 84  | Rock /Rocky   |
| MCU | 88  | Sand          |
| MCU | 90  | Schist        |
| MCU | 92  | Scoria        |
| MCU | 93  | Sea Tangle    |
| MCU | 94  | Seaweed       |
| MCU | 96  | Shells        |
| MCU | 98  | Shingle       |
| MCU | 99  | Silt          |
| MCU | 105 | Spicules      |
| MCU | 106 | Sponge        |
| MCU | 108 | Stone         |
| MCU | 111 | Tufa          |

#### PSC

#### Principal Surface Characteristics

Principal characteristic(s) of the surface.

|     |   |                        |
|-----|---|------------------------|
| PSC | 0 | Unknown                |
| PSC | 1 | Broken                 |
| PSC | 2 | Coarse                 |
| PSC | 3 | Decayed                |
| PSC | 4 | Fine, minute particles |
| PSC | 5 | Gritty                 |
| PSC | 6 | Hard                   |

|     |     |                   |
|-----|-----|-------------------|
| PSC | 7   | Rotten            |
| PSC | 8   | Soft              |
| PSC | 9   | Sticky            |
| PSC | 10  | Stiff             |
| PSC | 11  | Streaky           |
| PSC | 12  | Tenacious         |
| PSC | 13  | Uneven            |
| PSC | 14  | Bare/cleared      |
| PSC | 15  | Karst             |
| PSC | 16  | Membrane          |
| PSC | 17  | Calcareous        |
| PSC | 18  | Flinty            |
| PSC | 19  | Glacial           |
| PSC | 20  | Ground            |
| PSC | 21  | Large             |
| PSC | 22  | Rocky             |
| PSC | 23  | Small             |
| PSC | 24  | Speckled          |
| PSC | 25  | Varied            |
| PSC | 26  | Volcanic          |
| PSC | 27  | Medium            |
| PSC | 28  | Springs in Seabed |
| PSC | 29  | Mobile Bottom     |
| PSC | 99  | Medium            |
| PSC | 999 | Other             |

|     |                |                 |
|-----|----------------|-----------------|
| TRA | Traversability |                 |
| TRA | 0              | Unknown         |
| TRA | 1              | Traversable     |
| TRA | 2              | Non-Traversable |
| TRA | 4              | Polygon         |
| TRA | 5              | Pond            |
| TRA | 999            | Other           |

| TXT   | Text Attribute                  |              |           |          |  |
|-------|---------------------------------|--------------|-----------|----------|--|
|       | Narrative or other description. |              |           |          |  |
| TXT   | 0                               | Actual Value |           |          |  |
| Units | Format                          | Range        | Increment | Max Char |  |
|       | Text String                     | Lexical      |           | 256      |  |

|     |  |                        |
|-----|--|------------------------|
| UMC | Underlying Material Characteristics                            |                        |
|     | Characteristics of underlying material composition of feature. |                        |
| UMC | 0  | Unknown                |
| UMC | 2  | Coarse                 |
| UMC | 3  | Decayed                |
| UMC | 4  | Fine, Minute Particles |
| UMC | 5  | Gritty                 |
| UMC | 6  | Hard                   |
| UMC | 7  | Rotten                 |
| UMC | 8  | Soft                   |
| UMC | 9  | Sticky                 |
| UMC | 10   | Stiff                  |
| UMC | 11   | Streaky                |
| UMC | 12   | Tenacious              |

|     |    |            |
|-----|----|------------|
| UMC | 13 | Uneven     |
| UMC | 17 | Calcareous |
| UMC | 18 | Flinty     |
| UMC | 19 | Glacial    |
| UMC | 20 | Ground     |
| UMC | 21 | Large      |
| UMC | 22 | Rocky      |
| UMC | 23 | Small      |
| UMC | 24 | Speckled   |
| UMC | 25 | Varied     |
| UMC | 26 | Volcanic   |
| UMC | 27 | Medium     |

## USE

### Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |

|     |     |   |
|-----|-----|---|
| USE | 57  | Marine                                    |
| USE | 60  | Avalanche                                 |
| USE | 61  | Refugee                                   |
| USE | 62  | Prisoner                                  |
| USE | 68  | Animal sanctuary                          |
| USE | 69  | Levee/Dike                                |
| USE | 70  | Reserve/Reservation                       |
| USE | 73  | Terminus/Terminal                         |
| USE | 74  | Low Altitude enroute                      |
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 122 | Firebreak                     |
| USE | 123 | Tourist                       |
| USE | 124 | Irrigation                    |
| USE | 125 | Retaining                     |
| USE | 127 | as a causeway                 |
| USE | 128 | Mixed Urban or built-up Land  |
| USE | 129 | Military District             |
| USE | 130 | Transportation                |
| USE | 132 | Container                     |
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

**WID Width**

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**Maritime Boundary Area Feature Class**

ID

**F-Code/Description**

|       |                 |
|-------|-----------------|
| FC031 | Maritime Area   |
| FC036 | Restricted Area |
| FC177 | Swept Area      |

**AFA Available Facilities**

|     |    |                  |
|-----|----|------------------|
| AFA | 0  | Unknown          |
| AFA | 1  | Visitors Berth   |
| AFA | 2  | Visitors Mooring |
| AFA | 3  | Sailmaker        |
| AFA | 4  | Chandler         |
| AFA | 5  | Provisions       |
| AFA | 6  | Physician/Doctor |
| AFA | 7  | Pharmacy/Chemist |
| AFA | 8  | Drinking Water   |
| AFA | 9  | Fuel Station     |
| AFA | 10 | Electricity      |

|     |     |                  |
|-----|-----|------------------|
| AFA | 11  | Bottle Gas/LPG   |
| AFA | 12  | Showers          |
| AFA | 13  | Laundrette       |
| AFA | 14  | Toilets          |
| AFA | 15  | Post Box         |
| AFA | 16  | Public Telephone |
| AFA | 17  | Refuse Bin       |
| AFA | 18  | Water Police     |
| AFA | 19  | Helipad          |
| AFA | 20  | Ticket Sales     |
| AFA | 21  | No Ticket Sales  |
| AFA | 22  | Yatch Club       |
| AFA | 23  | Boat Hoist       |
| AFA | 24  | Boat Yard        |
| AFA | 25  | Public Inn       |
| AFA | 26  | Restaurant       |
| AFA | 999 | Other            |

|     |     |  |
|-----|-----|--|
| ATN |     | Aids to Navigation   |
|     |     | Indicates whether a feature is marked or unmarked by an aid to navigation. |
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked   |
| ATN | 3   | Lit  |
| ATN | 4   | Unlit  |
| ATN | 999 | Other  |

|     |   |   |
|-----|---|---|
| COD |   | Certainty of Delineation                                    |
|     |   | Indicates knowledge of the feature's limits or information. |
| COD | 0 | Unknown   |
| COD | 1 | Limits and Information Known                                |
| COD | 2 | Limits and Information Unknown                              |

|       |             |  |
|-------|-------------|--|
| DAN   |             | Description of Aids to Navigation  |
|       |             | Textual description of aids to navigation marking a feature, e.g. Marked by buoys. |
| DAN   | 0           | Actual Value   |
| Units | Format      | Range  |
|       | Text String | Lexical  |
|       |             | Increment  |
|       |             | Max Char   |
|       |             | 256  |

|       |             |   |
|-------|-------------|---|
| CDV   |             | Calendar Date Value                         |
|       |             | The calendar date as specified by ISO 8601. |
| CDV   | 0           | Actual Value                                |
| Units | Format      | Range                                       |
|       | Text String | ASCII Text                                  |
|       |             | Increment                                   |
|       |             | Max Char                                    |
|       |             | 8 Digits                                    |

|     |   |  |
|-----|---|--|
| EXS |   | Existence Category                     |
|     |   | The state or condition of the feature. |
| EXS | 0 | Unknown                                |
| EXS | 1 | Definite                               |
| EXS | 2 | Doubtful                               |
| EXS | 3 | Reported                               |
| EXS | 5 | Under Construction                     |
| EXS | 6 | Abandoned/Disused                      |



|     |     |                         |
|-----|-----|-------------------------|
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

**HDP**      **Hydrographic Depth**  
The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| HDP          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

**IAS**      **IMO Approval Status**  
Status of International Maritime Organization approval.

|     |   |              |
|-----|---|--------------|
| IAS | 1 | Approved     |
| IAS | 2 | Not Approved |

**MAC**      **Maritime Area Category**  
Area in which certain activities or factors of significance to navigation or operations apply.

|     |   |                               |
|-----|---|-------------------------------|
| MAC | 0 | Unknown                       |
| MAC | 1 | Customs Area                  |
| MAC | 2 | Dredged Channel/ Dredged Area |
| MAC | 3 | Harbor Area                   |

|     |    |   |
|-----|----|---|
| MAC | 4  | Mine Danger Area                              |
| MAC | 5  | Prohibited Shipping Area/Entry Prohibited     |
| MAC | 6  | Reclamation Area                              |
| MAC | 7  | Restricted Area                               |
| MAC | 9  | Works in progress area                        |
| MAC | 10 | Wire Drag Area/Swept Area                     |
| MAC | 11 | Anchorage (general)                           |
| MAC | 12 | Anchoring Berths                              |
| MAC | 13 | Explosive anchorage                           |
| MAC | 14 | Large Vessel/Deep Water/Deep Draft anchorage. |
| MAC | 15 | Anchoring Prohibited                          |
| MAC | 16 | Quarantine anchorage                          |
| MAC | 17 | Reserved Anchorage                            |
| MAC | 18 | Small Vessel Anchorage/Marina                 |
| MAC | 19 | Tanker Anchorage                              |
| MAC | 20 | Submarine Cable Area                          |
| MAC | 21 | Pipeline Area                                 |
| MAC | 22 | Fishing Prohibited                            |
| MAC | 23 | Cable and Pipeline Area                       |
| MAC | 24 | Turning Area / Swinging Circle                |
| MAC | 25 | Spoil Area / Spoil Ground                     |
| MAC | 26 | Unsurveyed Area                               |
| MAC | 27 | Submarine Exercise Area                       |
| MAC | 28 | Mine Laying Practice Area                     |
| MAC | 29 | Firing Danger Area                            |
| MAC | 30 | Dumping Ground for Hazardous Materials        |
| MAC | 31 | Incineration Area                             |
| MAC | 32 | Oil field                                     |
| MAC | 33 | Gas Field                                     |
| MAC | 34 | Historic Wreck                                |
| MAC | 35 | Explosive Dumping Ground                      |
| MAC | 36 | Former Mine Danger Area                       |
| MAC | 37 | Safety Zone                                   |
| MAC | 38 | Chemical field                                |
| MAC | 39 | Separation Zone                               |
| MAC | 40 | Roundabout Zone (TSS)                         |
| MAC | 41 | Inshore Traffic Zone (TSS)                    |
| MAC | 42 | Precautionary Area                            |
| MAC | 43 | Areas to be avoided                           |
| MAC | 44 | Degaussing Range                              |
| MAC | 45 | Outfall area                                  |
| MAC | 46 | Intake area                                   |
| MAC | 47 | Fish Haven/Protected Area                     |
| MAC | 48 | Pilot Boarding Area                           |
| MAC | 49 | Cargo Transshipment Area                      |
| MAC | 50 | Red Rocks                                     |
| MAC | 51 | Laterite                                      |
| MAC | 52 | Evaporites                                    |
| MAC | 53 | Seaplane                                      |
| MAC | 54 | Time Limited                                  |
| MAC | 55 | Fairway                                       |
| MAC | 56 | Fish Trap Area                                |
| MAC | 57 | Marine farm                                   |
| MAC | 58 | Dredging area                                 |

|     |     |                                |
|-----|-----|--------------------------------|
| MAC | 61  | Sewer Area                     |
| MAC | 79  | Free Port Area                 |
| MAC | 80  | Fish Sanctuary                 |
| MAC | 81  | Degaussing Range               |
| MAC | 82  | Development Area               |
| MAC | 83  | Diving prohibited zone         |
| MAC | 84  | Danger of stranding area       |
| MAC | 85  | Navigational aid safety zone   |
| MAC | 86  | Historic wreck restricted area |
| MAC | 87  | Seal sanctuary                 |
| MAC | 88  | Game preserve                  |
| MAC | 89  | Bird sanctuary                 |
| MAC | 90  | Nature preserve                |
| MAC | 91  | Practice area in general       |
| MAC | 92  | Torpedo practice area          |
| MAC | 93  | Anchorage for up to 24 hours   |
| MAC | 94  | Small craft mooring area       |
| MAC | 95  | Seaplane anchorage             |
| MAC | 96  | Unrestricted anchorage         |
| MAC | 97  | Crossing (TSS)                 |
| MAC | 98  | Offshore Production Area       |
| MAC | 99  | Dock Area                      |
| MAC | 999 | Other                          |

**MAS** Maintenance Status  
Indicates whether the feature is maintained.

|     |   |                |
|-----|---|----------------|
| MAS | 1 | Maintained     |
| MAS | 2 | Not Maintained |

**NAM** Name  
Any Identifier or code.

| NAM   | 0           | Actual Value |           |           |
|-------|-------------|--------------|-----------|-----------|
| Units | Format      | Range        | Increment | Max Chars |
|       | Text String | Lexical      |           | 80        |

**PRO** Product Category  
Principal material involved or product resulting from activity at site.

|     |     |                      |
|-----|-----|----------------------|
| PRO | 0   | Unknown              |
| PRO | 5   | Asphalt              |
| PRO | 13  | Chemical             |
| PRO | 22  | Conglomerate         |
| PRO | 26  | Desalinated Water    |
| PRO | 30  | Earthen              |
| PRO | 31  | Electric             |
| PRO | 33  | Explosives           |
| PRO | 35  | Food                 |
| PRO | 38  | Gas                  |
| PRO | 39  | Gasoline             |
| PRO | 50  | Heat                 |
| PRO | 52  | Lava                 |
| PRO | 67  | Oil                  |
| PRO | 69  | Ooze                 |
| PRO | 82  | Radioactive Material |
| PRO | 102 | Sludge               |

|     |     |                    |
|-----|-----|--------------------|
| PRO | 116 | Water              |
| PRO | 128 | Refuse             |
| PRO | 130 | None               |
| PRO | 132 | Not Applicable     |
| PRO | 133 | Telecommunications |
| PRO | 997 | Not Applicable     |
| PRO | 998 | Multiple           |
| PRO | 999 | Other              |

TSP Traffic Scheme Part (*component of the traffic routing system*)

|     |   |                       |
|-----|---|-----------------------|
| TSP | 1 | Arrow                 |
| TSP | 2 | Outer Boundary        |
| TSP | 3 | Separation Zone Area  |
| TSP | 4 | Separation Zone Line  |
| TSP | 5 | Separation Zone Point |
| TSP | 6 | Inbound Area          |
| TSP | 7 | Outbound Area         |

TXT Text Attribute  
Narrative or other description.

| TXT   | 0           | Actual Value |           |          |
|-------|-------------|--------------|-----------|----------|
| Units | Format      | Range        | Increment | Max Char |
|       | Text String | Lexical      |           | 256      |

USE Usage  
Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |

|     |     |                                   |
|-----|-----|-----------------------------------|
| USE | 41  | Industrial                        |
| USE | 42  | Commercial                        |
| USE | 43  | Institutional                     |
| USE | 44  | Residential                       |
| USE | 45  | Agricultural                      |
| USE | 48  | Decoy                             |
| USE | 49  | Civilian/Public                   |
| USE | 50  | Limited                           |
| USE | 51  | Telegraph                         |
| USE | 52  | Telephone                         |
| USE | 53  | Power                             |
| USE | 57  | Marine                            |
| USE | 60  | Avalanche                         |
| USE | 61  | Refugee                           |
| USE | 62  | Prisoner                          |
| USE | 68  | Animal sanctuary                  |
| USE | 69  | Levee/Dike                        |
| USE | 70  | Reserve/Reservation               |
| USE | 73  | Terminus/Terminal                 |
| USE | 74  | Low Altitude enroute              |
| USE | 75  | High Altitude Enroute             |
| USE | 76  | Low and High Altitude Enroute     |
| USE | 77  | Short Take-off Landing Approach   |
| USE | 78  | Visual Approach                   |
| USE | 79  | Non-Precision Instrument Approach |
| USE | 80  | Precision Instrument Approach     |
| USE | 81  | Entry                             |
| USE | 82  | Exit                              |
| USE | 83  | Transaction                       |
| USE | 84  | Feeder                            |
| USE | 85  | Initial Approach Fix              |
| USE | 86  | Final Approach Fix                |
| USE | 87  | Visual Descent Point              |
| USE | 88  | Missed Approach Point             |
| USE | 89  | Radar                             |
| USE | 90  | Mileage Break Down                |
| USE | 91  | NAVAID Changeover                 |
| USE | 92  | Altimeter Change                  |
| USE | 93  | Compulsory Reporting Points       |
| USE | 94  | Non-Compulsory Reporting Points   |
| USE | 95  | Alert Apron/Hardstand             |
| USE | 96  | Operational Apron/Hardstand       |
| USE | 97  | Hanger/Apron                      |
| USE | 98  | Base Flight Apron                 |
| USE | 99  | Engine Test Pad/Apron             |
| USE | 100 | Transient Apron                   |
| USE | 101 | Depot Apron                       |
| USE | 102 | Stub Apron                        |
| USE | 103 | Dispersal Hardstand               |
| USE | 104 | Pad Hardstand                     |
| USE | 105 | Refueling Hardstand               |
| USE | 106 | Parking Hardstand                 |
| USE | 107 | Engine Run-up Hardstand           |
| USE | 108 | Firing-In Hardstand               |

|     |     |   |
|-----|-----|---|
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

**WID** Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

| WID    | 0             | Actual Value |           |           |
|--------|---------------|--------------|-----------|-----------|
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

**WPC** Work in Progress Category  
WPC 1 Land Reclamation  
WPC 2 Construction of Structures

#### Maritime Reference Line Feature Class

ID

F-Code/Description  
FC100 Measured Distance Line

A course whose length has been accurately measured and is used in conjunction with ranges ashore. It is used by vessels to calibrate logs, engine revolution counters, etc., and determine speed

FC130 Radar Reference Line  
FC021 Maritime Limit Boundary

BRG Bearing of Object

The bearing of an object from an observer (on any point along the line) towards the object or feature, expressed in degrees and tenths (e.g. 3.0 DEG).

BRG 0 Actual Value

| Units   | Format         | Range     | Increment | Max Char |
|---------|----------------|-----------|-----------|----------|
| Degrees | Floating Point | 0.0-359.9 | 0.1 DEG   |          |

BRR Bearing and Reciprocal Category

True course of a vessel in 0.1 degree increments, when proceeding along a track or route, followed by its reciprocal bearing (ie. 053.1-233.1).

BRR 0 Actual Value

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Text String | ASCII Text |           | 5        |

COD Certainty of Delineation

Indicates knowledge of the feature's limits or information.

COD 0 Unknown

COD 1 Limits and Information Known

COD 2 Limits and Information Unknown

DRP Description of Reference Point

Description of the feature(s) which form a Leading Line or Clearing Line.

DRP 0 Actual Value

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           |          |

EXS Existence Category

The state or condition of the feature.

EXS 0 Unknown

EXS 1 Definite

EXS 2 Doubtful

EXS 3 Reported

EXS 5 Under Construction

EXS 6 Abandoned/Disused

EXS 7 Destroyed

EXS 10 Proposed

EXS 11 Temporary

EXS 12 Alternate

EXS 18 Permanent

EXS 25 Not Maintained

EXS 26 Maintained

EXS 27 Closed/Locked

EXS 28 Operational

EXS 30 Not Isolated

EXS 31 Isolated

EXS 33 Ruined

EXS 35 Other

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

#### LAF

##### Line Associated Features

The type and/or number of features associated with a leading or clearing line.

|     |   |  |
|-----|---|--|
| LAF | 1 | One Object (Other Than a Directional Light)            |
| LAF | 2 | Directional Light                                      |
| LAF | 3 | Two or More Lights                                     |
| LAF | 4 | Two or More Beacons                                    |
| LAF | 5 | Two or More Objects (Other Than Two Lights or Beacons) |
| LAF | 6 | Measured Distance Markers                              |
| LAF | 7 | Directional Radiobeacon                                |
| LAF | 8 | Moiré Effect Light                                     |

#### LOR

##### Length of Range

Length of range, in nautical miles, established by aids to navigation on the shore.

|     |                |               |              |                  |                 |
|-----|----------------|---------------|--------------|------------------|-----------------|
| LOR | 0              | Actual Value  |              |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Nautical Miles | Short Integer | 0±32,767     | 1 NM             |                 |

#### MAC

##### Maritime Area Category

Area in which certain activities or factors of significance to navigation or operations apply.

|     |    |   |
|-----|----|---|
| MAC | 0  | Unknown                                   |
| MAC | 1  | Customs Area                              |
| MAC | 2  | Dredged Channel/ Dredged Area             |
| MAC | 3  | Harbor Area                               |
| MAC | 4  | Mine Danger Area                          |
| MAC | 5  | Prohibited Shipping Area/Entry Prohibited |
| MAC | 6  | Reclamation Area                          |
| MAC | 7  | Restricted Area                           |
| MAC | 9  | Works in progress area                    |
| MAC | 10 | Wire Drag Area/Swept Area                 |



|     |    |   |
|-----|----|---|
| MAC | 11 | Anchorage (general)                           |
| MAC | 12 | Anchoring Berths                              |
| MAC | 13 | Explosive anchorage                           |
| MAC | 14 | Large Vessel/Deep Water/Deep Draft anchorage. |
| MAC | 15 | Anchoring Prohibited                          |
| MAC | 16 | Quarantine anchorage                          |
| MAC | 17 | Reserved Anchorage                            |
| MAC | 18 | Small Vessel Anchorage/Marina                 |
| MAC | 19 | Tanker Anchorage                              |
| MAC | 20 | Submarine Cable Area                          |
| MAC | 21 | Pipeline Area                                 |
| MAC | 22 | Fishing Prohibited                            |
| MAC | 23 | Cable and Pipeline Area                       |
| MAC | 24 | Turning Area / Swinging Circle                |
| MAC | 25 | Spoil Area / Spoil Ground                     |
| MAC | 26 | Unsurveyed Area                               |
| MAC | 27 | Submarine Exercise Area                       |
| MAC | 28 | Mine Laying Practice Area                     |
| MAC | 29 | Firing Danger Area                            |
| MAC | 30 | Dumping Ground for Hazardous Materials        |
| MAC | 31 | Incineration Area                             |
| MAC | 32 | Oil field                                     |
| MAC | 33 | Gas Field                                     |
| MAC | 34 | Historic Wreck                                |
| MAC | 35 | Explosive Dumping Ground                      |
| MAC | 36 | Former Mine Danger Area                       |
| MAC | 37 | Safety Zone                                   |
| MAC | 38 | Chemical field                                |
| MAC | 39 | Separation Zone                               |
| MAC | 40 | Roundabout Zone (TSS)                         |
| MAC | 41 | Inshore Traffic Zone (TSS)                    |
| MAC | 42 | Precautionary Area                            |
| MAC | 43 | Areas to be avoided                           |
| MAC | 44 | Degaussing Range                              |
| MAC | 45 | Outfall area                                  |
| MAC | 46 | Intake area                                   |
| MAC | 47 | Fish Haven/Protected Area                     |
| MAC | 48 | Pilot Boarding Area                           |
| MAC | 49 | Cargo Transshipment Area                      |
| MAC | 50 | Red Rocks                                     |
| MAC | 51 | Laterite                                      |
| MAC | 52 | Evaporites                                    |
| MAC | 53 | Seaplane                                      |
| MAC | 54 | Time Limited                                  |
| MAC | 55 | Fairway                                       |
| MAC | 56 | Fish Trap Area                                |
| MAC | 57 | Marine farm                                   |
| MAC | 58 | Dredging area                                 |
| MAC | 61 | Sewer Area                                    |
| MAC | 79 | Free Port Area                                |
| MAC | 80 | Fish Sanctuary                                |
| MAC | 81 | Degaussing Range                              |
| MAC | 82 | Development Area                              |
| MAC | 83 | Diving prohibited zone                        |

|     |     |                                |
|-----|-----|--------------------------------|
| MAC | 84  | Danger of stranding area       |
| MAC | 85  | Navigational aid safety zone   |
| MAC | 86  | Historic wreck restricted area |
| MAC | 87  | Seal sanctuary                 |
| MAC | 88  | Game preserve                  |
| MAC | 89  | Bird sanctuary                 |
| MAC | 90  | Nature preserve                |
| MAC | 91  | Practice area in general       |
| MAC | 92  | Torpedo practice area          |
| MAC | 93  | Anchorage for up to 24 hours   |
| MAC | 94  | Small craft mooring area       |
| MAC | 95  | Seaplane anchorage             |
| MAC | 96  | Unrestricted anchorage         |
| MAC | 97  | Crossing (TSS)                 |
| MAC | 98  | Offshore Production Area       |
| MAC | 99  | Dock Area                      |
| MAC | 999 | Other                          |

#### MBL

##### Maritime Boundary Limit

A line where on either side certain activities or factors of significance to navigation or operations apply.

|     |     |  |
|-----|-----|--|
| MBL | 0   | Unknown                                  |
| MBL | 1   | Colregs Demarcation Line                 |
| MBL | 2   | Customs Boundary                         |
| MBL | 3   | Fishing Zone Boundary                    |
| MBL | 4   | Harbor Limit                             |
| MBL | 5   | Separation Line (TSS)                    |
| MBL | 6   | Territorial Waters -Limit of Sovereignty |
| MBL | 7   | Territorial Waters Baseline              |
| MBL | 8   | Maritime Limit (General)                 |
| MBL | 9   | International Boundary (at sea)          |
| MBL | 10  | Continental Shelf Boundary               |
| MBL | 11  | Limit of Exclusive Economic Zone         |
| MBL | 12  | Limit of Contiguous Zone                 |
| MBL | 13  | Clearing Line                            |
| MBL | 14  | Danger Line                              |
| MBL | 15  | Armistice Boundary                       |
| MBL | 98  | Traffic Services Limit                   |
| MBL | 999 | Other                                    |

#### NAM

##### Name

Any Identifier or code.

|       |             |              |           |           |
|-------|-------------|--------------|-----------|-----------|
| NAM   | 0           | Actual Value |           |           |
| Units | Format      | Range        | Increment | Max Chars |
|       | Text String | Lexical      |           | 80        |

#### OPS

##### Operational Status

Indicates whether or not the feature is in operation.

|     |   |                 |
|-----|---|-----------------|
| OPS | 1 | Operational     |
| OPS | 2 | Non-Operational |

**PRO**      **Product Category**  
Principal material involved or product resulting from activity at site.

|     |     |                      |
|-----|-----|----------------------|
| PRO | 0   | Unknown              |
| PRO | 5   | Asphalt              |
| PRO | 13  | Chemical             |
| PRO | 22  | Conglomerate         |
| PRO | 26  | Desalinated Water    |
| PRO | 30  | Earthen              |
| PRO | 31  | Electric             |
| PRO | 33  | Explosives           |
| PRO | 35  | Food                 |
| PRO | 38  | Gas                  |
| PRO | 39  | Gasoline             |
| PRO | 50  | Heat                 |
| PRO | 52  | Lava                 |
| PRO | 67  | Oil                  |
| PRO | 69  | Ooze                 |
| PRO | 82  | Radioactive Material |
| PRO | 102 | Sludge               |
| PRO | 116 | Water                |
| PRO | 128 | Refuse               |
| PRO | 130 | None                 |
| PRO | 132 | Not Applicable       |
| PRO | 133 | Telecommunications   |
| PRO | 997 | Not Applicable       |
| PRO | 998 | Multiple             |
| PRO | 999 | Other                |

**TXT**      **Text Attribute**  
Narrative or other description.

|              |               |              |                  |                 |  |
|--------------|---------------|--------------|------------------|-----------------|--|
| TXT          | 0             | Actual Value |                  |                 |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |  |
|              | Text String   | Lexical      |                  | 256             |  |

**UNI**      **Units Category**  
Units associated strictly with the measured distance lines (FC100) for nautical data. [Reference DIGEST Part 3 for Units associated with DIGEST header data.]

|     |    |                |
|-----|----|----------------|
| UNI | 1  | Meters         |
| UNI | 11 | Nautical Miles |
| UNI | 22 | Feet           |
| UNI | 23 | Kilometers     |
| UNI | 24 | Yards          |

#### **Maritime Route Line Feature Class**

**ID**

**F-Code/Description**

|       |                  |
|-------|------------------|
| FC165 | Route (Maritime) |
| FC170 | Safety Fairway   |
| FC168 | Canal Route      |

|       |   |                    |           |          |  |
|-------|---|--------------------|-----------|----------|--|
| ATN   | Aids to Navigation  |                    |           |          |  |
|       | Indicates whether a feature is marked or unmarked by an aid to navigation.  |                    |           |          |  |
| ATN   | 0   | Unknown            |           |          |  |
| ATN   | 1   | Marked             |           |          |  |
| ATN   | 2   | Unmarked           |           |          |  |
| ATN   | 3   | Lit                |           |          |  |
| ATN   | 4   | Unlit              |           |          |  |
| ATN   | 999   | Other              |           |          |  |
| BRR   | Bearing and Reciprocal Category   |                    |           |          |  |
|       | True course of a vessel in 0.1 degree increments, when proceeding along a track or route, followed by its reciprocal bearing (ie. 053.1-233.1). |                    |           |          |  |
| BRR   | 0   | Actual Value       |           |          |  |
| Units | Format  | Range              | Increment | Max Char |  |
|       | Text String   | ASCII Text         |           | 5        |  |
| BRS   | Bearing From Seaward  |                    |           |          |  |
|       | True course of a vessel when proceeding from seaward along a track or course.   |                    |           |          |  |
| BRS   | 0   | Actual Value       |           |          |  |
| Units | Format  | Range              | Increment | Max Char |  |
|       | Degrees Floating Point  | 0-360              | 0.1 DEG   |          |  |
| DAN   | Description of Aids to Navigation   |                    |           |          |  |
|       | Textual description of aids to navigation marking a feature, e.g. Marked by buoys.  |                    |           |          |  |
| DAN   | 0   | Actual Value       |           |          |  |
| Units | Format  | Range              | Increment | Max Char |  |
|       | Text String   | Lexical            |           | 256      |  |
| DOF   | Direction of Flow   |                    |           |          |  |
|       | Bearing of movement or direction of the flow.   |                    |           |          |  |
| DOF   | 0   | Actual Value       |           |          |  |
| Units | Format  | Range              | Increment | Max Char |  |
|       | Degrees   | Short Integer      | 0-359     | 1 DEG    |  |
| DRP   | Description of Reference Point  |                    |           |          |  |
|       | Description of the feature(s) which form a Leading Line or Clearing Line.   |                    |           |          |  |
| DRP   | 0   | Actual Value       |           |          |  |
| Units | Format  | Range              | Increment | Max Char |  |
|       | Text String   | Lexical            |           |          |  |
| EXS   | Existence Category  |                    |           |          |  |
|       | The state or condition of the feature.  |                    |           |          |  |
| EXS   | 0   | Unknown            |           |          |  |
| EXS   | 1   | Definite           |           |          |  |
| EXS   | 2   | Doubtful           |           |          |  |
| EXS   | 3   | Reported           |           |          |  |
| EXS   | 5   | Under Construction |           |          |  |
| EXS   | 6   | Abandoned/Disused  |           |          |  |
| EXS   | 7   | Destroyed          |           |          |  |
| EXS   | 10  | Proposed           |           |          |  |
| EXS   | 11  | Temporary          |           |          |  |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

|     |                                       |                                     |
|-----|---------------------------------------|-------------------------------------|
| HDI | Hydrographic Depth/Height Information |                                     |
| HDI | 9                                     | Depth Known by Other Than Wire Drag |
| HDI | 10                                    | Depth Known by Wire Drag            |
| HDI | 12                                    | Depth Unknown                       |
| HDI | 13                                    | Uncovering Height Known             |
| HDI | 14                                    | Uncovering Height Unknown           |
| HDI | 15                                    | Not Applicable                      |

**HDP**      **Hydrographic Depth**  
The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

|     |              |               |              |                  |                  |
|-----|--------------|---------------|--------------|------------------|------------------|
| HDP | 0            | Actual Value  |              |                  |                  |
|     | <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters       | Short Integer | 0±32,767     | 1 M              |                  |

**MAC**      **Maritime Area Category**  
Area in which certain activities or factors of significance to navigation or operations apply.

|     |   |                               |
|-----|---|-------------------------------|
| MAC | 0 | Unknown                       |
| MAC | 1 | Customs Area                  |
| MAC | 2 | Dredged Channel/ Dredged Area |
| MAC | 3 | Harbor Area                   |

|     |    |   |
|-----|----|---|
| MAC | 4  | Mine Danger Area                              |
| MAC | 5  | Prohibited Shipping Area/Entry Prohibited     |
| MAC | 6  | Reclamation Area                              |
| MAC | 7  | Restricted Area                               |
| MAC | 9  | Works in progress area                        |
| MAC | 10 | Wire Drag Area/Swept Area                     |
| MAC | 11 | Anchorage (general)                           |
| MAC | 12 | Anchoring Berths                              |
| MAC | 13 | Explosive anchorage                           |
| MAC | 14 | Large Vessel/Deep Water/Deep Draft anchorage. |
| MAC | 15 | Anchoring Prohibited                          |
| MAC | 16 | Quarantine anchorage                          |
| MAC | 17 | Reserved Anchorage                            |
| MAC | 18 | Small Vessel Anchorage/Marina                 |
| MAC | 19 | Tanker Anchorage                              |
| MAC | 20 | Submarine Cable Area                          |
| MAC | 21 | Pipeline Area                                 |
| MAC | 22 | Fishing Prohibited                            |
| MAC | 23 | Cable and Pipeline Area                       |
| MAC | 24 | Turning Area / Swinging Circle                |
| MAC | 25 | Spoil Area / Spoil Ground                     |
| MAC | 26 | Unsurveyed Area                               |
| MAC | 27 | Submarine Exercise Area                       |
| MAC | 28 | Mine Laying Practice Area                     |
| MAC | 29 | Firing Danger Area                            |
| MAC | 30 | Dumping Ground for Hazardous Materials        |
| MAC | 31 | Incineration Area                             |
| MAC | 32 | Oil field                                     |
| MAC | 33 | Gas Field                                     |
| MAC | 34 | Historic Wreck                                |
| MAC | 35 | Explosive Dumping Ground                      |
| MAC | 36 | Former Mine Danger Area                       |
| MAC | 37 | Safety Zone                                   |
| MAC | 38 | Chemical field                                |
| MAC | 39 | Separation Zone                               |
| MAC | 40 | Roundabout Zone (TSS)                         |
| MAC | 41 | Inshore Traffic Zone (TSS)                    |
| MAC | 42 | Precautionary Area                            |
| MAC | 43 | Areas to be avoided                           |
| MAC | 44 | Degaussing Range                              |
| MAC | 45 | Outfall area                                  |
| MAC | 46 | Intake area                                   |
| MAC | 47 | Fish Haven/Protected Area                     |
| MAC | 48 | Pilot Boarding Area                           |
| MAC | 49 | Cargo Transshipment Area                      |
| MAC | 50 | Red Rocks                                     |
| MAC | 51 | Laterite                                      |
| MAC | 52 | Evaporites                                    |
| MAC | 53 | Seaplane                                      |
| MAC | 54 | Time Limited                                  |
| MAC | 55 | Fairway                                       |
| MAC | 56 | Fish Trap Area                                |
| MAC | 57 | Marine farm                                   |
| MAC | 58 | Dredging area                                 |

|     |     |                                |
|-----|-----|--------------------------------|
| MAC | 61  | Sewer Area                     |
| MAC | 79  | Free Port Area                 |
| MAC | 80  | Fish Sanctuary                 |
| MAC | 81  | Degaussing Range               |
| MAC | 82  | Development Area               |
| MAC | 83  | Diving prohibited zone         |
| MAC | 84  | Danger of stranding area       |
| MAC | 85  | Navigational aid safety zone   |
| MAC | 86  | Historic wreck restricted area |
| MAC | 87  | Seal sanctuary                 |
| MAC | 88  | Game preserve                  |
| MAC | 89  | Bird sanctuary                 |
| MAC | 90  | Nature preserve                |
| MAC | 91  | Practice area in general       |
| MAC | 92  | Torpedo practice area          |
| MAC | 93  | Anchorage for up to 24 hours   |
| MAC | 94  | Small craft mooring area       |
| MAC | 95  | Seaplane anchorage             |
| MAC | 96  | Unrestricted anchorage         |
| MAC | 97  | Crossing (TSS)                 |
| MAC | 98  | Offshore Production Area       |
| MAC | 99  | Dock Area                      |
| MAC | 999 | Other                          |

#### NAM

##### Name

Any Identifier or code.

|              |               |              |                  |                  |    |
|--------------|---------------|--------------|------------------|------------------|----|
| NAM          | 0             | Actual Value |                  |                  |    |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |    |
|              | Text String   | Lexical      |                  |                  | 80 |

#### OPT

##### Operations Times

|     |     |                             |
|-----|-----|-----------------------------|
| OPT | 0   | Unknown                     |
| OPT | 1   | Daytime (Sunrise/Sunset)    |
| OPT | 2   | Nighttime                   |
| OPT | 3   | Continuous                  |
| OPT | 4   | Summertime (April-October)  |
| OPT | 5   | Wintertime (November-March) |
| OPT | 999 | Other                       |

#### ORC

##### Operating Range Category

The range of the NAVAID beyond which the capture of the signal is not completely assured.

|     |   |              |
|-----|---|--------------|
| ORC | 0 | Actual Value |
|-----|---|--------------|

#### PBV

##### Pilot Boarding Vehicle

|     |   |               |
|-----|---|---------------|
| PBV | 1 | By Boat       |
| PBV | 2 | By Helicopter |

#### RTT

##### Route Intended Use

|     |   |   |
|-----|---|---|
| RTT | 0 | Unknown   |
| RTT | 1 | Recommended Track                                   |
| RTT | 2 | Recommended track for other than deep draft vessels |
| RTT | 3 | Recommended track for deep draft vessels            |
| RTT | 4 | Deep Water Route                                    |

|     |     |                                       |
|-----|-----|---------------------------------------|
| RTT | 5   | Transit Route                         |
| RTT | 6   | Radar Guided Track                    |
| RTT | 7   | Measured Distance Line                |
| RTT | 8   | Safety Fairway/Channel                |
| RTT | 9   | Traffic Lane (TSS)                    |
| RTT | 10  | Roundabout Lane (TSS)                 |
| RTT | 11  | Two-way Route                         |
| RTT | 12  | Recommended Track (TSS)               |
| RTT | 13  | Recommended direction of traffic flow |
| RTT | 14  | Primary Route                         |
| RTT | 15  | Secondary Route                       |
| RTT | 97  | Centerline                            |
| RTT | 98  | Deep Water Route - Centerline         |
| RTT | 99  | Deep Water Route - Part               |
| RTT | 999 | Other                                 |

|     |                                 |               |              |                  |                 |
|-----|---------------------------------|---------------|--------------|------------------|-----------------|
| TXT | Text Attribute                  |               |              |                  |                 |
|     | Narrative or other description. |               |              |                  |                 |
|     | TXT                             | 0             | Actual Value |                  |                 |
|     | <u>Units</u>                    | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     |                                 | Text String   | Lexical      |                  | 256             |

|     |   |               |              |                  |                  |
|-----|---|---------------|--------------|------------------|------------------|
| WID | Width   |               |              |                  |                  |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |               |              |                  |                  |
|     | WID   | 0             | Actual Value |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters  | Short Integer | 0±32,767     | 1 M              |                  |

#### Demarcation Void Collection Area Feature Class

ID

#### F-CODE/DESCRIPTION

ZD020 Void Collection Area

|     |                               |  |
|-----|-------------------------------|--|
| VCA | Void Collection Attribute     |  |
|     | Reason data is not collected. |  |
|     | VCA                           | 0 Unknown                                      |
|     | VCA                           | 1 Data Not Requested By User                   |
|     | VCA                           | 2 Area Too Rough to Collect                    |
|     | VCA                           | 3 No Available Imagery                         |
|     | VCA                           | 4 Different Height Threshold Within Data Block |
|     | VCA                           | 5 Low Data Collection Criteria                 |
|     | VCA                           | 6 No Available Map Source                      |
|     | VCA                           | 7 No Suitable Imagery                          |
|     | VCA                           | 8 Data Not Required                            |
|     | VCA                           | 999 Other                                      |



## Appendix E. Elevation Coverage

### Elevation Line Feature Class

ID

#### F-CODE/DESCRIPTION

CA010 Contour Line (Land)  
A line connecting points having the same vertical datum value.

CA020 Ridge Line  
A line representation of a ridge top.

CA025 Valley Bottom Line  
A line representation of the lowest part of a valley.

CA026 Breakline  
Line representing the demarcation of a sudden and significant change in the gradient of the terrain relief.

CA027 *Berm*

HQC

#### Hypsography Portrayal Category

HQC 0 Unknown

HQC 1 Index

HQC 2 Intermediate

HQC 3 Supplementary (1/2)

HQC 4 Form Lines

HQC 5 Depression Index

HQC 6 Depression Intermediate

HQC 7 Approximate Index

HQC 8 Mound Index

HQC 9 Mound Intermediate

HQC 12 Intermediate Approximate

HQC 13 Supplementary Approximate

HQC 14 Supplementary (1/4)

HQC 15 Depression approximate

HQC 16 Auxiliary

HQC 18 Intermediate Depression Approximate

HQC 19 Carrying Contour (coincident contours)

HQC 20 Supplemental Carrying Contour

HQC 20 Carrying contour

HQC 22 Supplemental Depression

HQC 23 Supplemental Depression Approximate

HQC 98 Transition or erroneous

HQC 99 Connector

MCC

#### Material Composition Category

MCC 0 Unknown

MCC 4 Ash

MCC 5 Asphalt

MCC 6 Basalt

MCC 7 Bedrock

MCC 8 Boulders

MCC 9 Brick

MCC 10 Calcareous

MCC 11 Cement

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 12 | Chalk                          |
| MCC | 13 | Chemical                       |
| MCC | 14 | Cinders                        |
| MCC | 15 | Cirripedia                     |
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |
| MCC | 66 | Mussels                        |
| MCC | 67 | Oil                            |
| MCC | 68 | Oil Blister                    |
| MCC | 69 | Ooze                           |

|     |     |                      |
|-----|-----|----------------------|
| MCC | 70  | Oysters              |
| MCC | 71  | Paper                |
| MCC | 72  | Part Metal           |
| MCC | 73  | Pebbles              |
| MCC | 74  | Plastic              |
| MCC | 75  | Polyzoa              |
| MCC | 76  | Porphyry             |
| MCC | 77  | Prestressed Concrete |
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |
| MCC | 999 | Other                |

#### USE

|       |   |          |
|-------|---|----------|
| Usage |   |          |
| USE   | 0 | Unknown  |
| USE   | 4 | National |

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |

|     |     |   |
|-----|-----|---|
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

|     |                              |
|-----|------------------------------|
| ZV1 | Lowest Z-value               |
| ZV2 | Highest Z-value              |
| ZV3 | Airfield/Aerodrome Elevation |

### Elevation Point Feature Class

ID

F-CODE/DESCRIPTION

|   |                        |
|---|------------------------|
| CA030   | Spot Elevation         |
| A designated location with an elevation value relative to a vertical datum.   |                        |
| CA035   | Inland Water Elevation |
| A location with a generalized elevation value relative to a vertical datum associated with an inland, usually confined, water body. |                        |

|                                  |                   |
|----------------------------------|-------------------|
| ACC                              | Accuracy Category |
| Accuracy of geographic position. |                   |
| ACC                              | 0 Unknown         |
| ACC                              | 1 Accurate        |
| ACC                              | 2 Approximate     |
| ACC                              | 3 Doubtful        |
| ACC                              | 5 Disputed        |
| ACC                              | 6 Undisputed      |
| ACC                              | 7 Precise         |
| ACC                              | 8 Abrogated       |

|     |                               |
|-----|-------------------------------|
| MCC | Material Composition Category |
| MCC | 0 Unknown                     |
| MCC | 4 Ash                         |
| MCC | 5 Asphalt                     |
| MCC | 6 Basalt                      |
| MCC | 7 Bedrock                     |
| MCC | 8 Boulders                    |
| MCC | 9 Brick                       |
| MCC | 10 Calcareous                 |
| MCC | 11 Cement                     |
| MCC | 12 Chalk                      |
| MCC | 13 Chemical                   |
| MCC | 14 Cinders                    |
| MCC | 15 Cirripedia                 |

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |
| MCC | 66 | Mussels                        |
| MCC | 67 | Oil                            |
| MCC | 68 | Oil Blister                    |
| MCC | 69 | Ooze                           |
| MCC | 70 | Oysters                        |
| MCC | 71 | Paper                          |
| MCC | 72 | Part Metal                     |
| MCC | 73 | Pebbles                        |

|     |     |                      |
|-----|-----|----------------------|
| MCC | 74  | Plastic              |
| MCC | 75  | Polyzoa              |
| MCC | 76  | Porphyry             |
| MCC | 77  | Prestressed Concrete |
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |
| MCC | 999 | Other                |

|     |   |                         |
|-----|---|-------------------------|
| SPE |   | Spot Elevation Category |
| SPE | 0 | Unknown                 |
| SPE | 1 | Top of trees            |
| SPE | 2 | Out of position         |
| SPE | 3 | Summit                  |



### **Terrain Feature Class**

ID

F-CODE/DESCRIPTION

|     |                 |   |
|-----|-----------------|---|
|     | CA050           | Surface                                   |
| PYT | Polygon Type    |   |
| PYT | 1               | Triangulated Irregular Network (triangle) |
| ZV2 | Highest Z-Value |   |

### **Miscellaneous Elevation Feature Class**

ID

F-CODE/DESCRIPTION

|     |                       |               |   |
|-----|-----------------------|---------------|---|
|     | SA050                 | Slope Polygon | An area enclosing a group of slope values falling within a set range. |
| GSC | Ground Slope Category |               |   |
| GSC | 1                     | 0->45         | Culturally or Naturally Dissected Land                                |
| GSC | 2                     | ≤ 30          |   |
| GSC | 3                     | >3 and < 10   |   |
| GSC | 4                     | >10 and ≤ 20  |   |
| GSC | 5                     | >20 and ≤ 30  |   |
| GSC | 6                     | >30 and ≤ 45  |   |
| GSC | 7                     | >45           |   |
| GSC | 8                     | >10 and ≤ 15  |   |
| GSC | 9                     | >15 and ≤ 20  |   |
| GSC | 10                    | >45 and ≤ 60  |   |
| GSC | 11                    | >60           |   |
| GSC | 12                    | >60 and ≤ 85  |   |
| GSC | 13                    | >85           |   |

### **Data Quality Feature Class**

ID

F-CODE/DESCRIPTION

|     |                           |                            |  |
|-----|---------------------------|----------------------------|--|
|     | ZD020                     | Void Collection Area       | An area lacking suitable source coverage, or where data is not required. |
| VCA | Void Collection Attribute |                            |  |
| VCA | 0                         | Unknown                    |  |
| VCA | 1                         | Data Not Requested By User |  |

|     |     |  |
|-----|-----|--|
| VCA | 2   | Area Too Rough to Collect                    |
| VCA | 3   | No Available Imagery                         |
| VCA | 4   | Different Height Threshold Within Data Block |
| VCA | 5   | Low Data Collection Criteria                 |
| VCA | 6   | No Available Map Source                      |
| VCA | 7   | No Suitable Imagery                          |
| VCA | 8   | Data Not Required                            |
| VCA | 999 | Other  |

|     |                      |         |
|-----|----------------------|---------|
| VCT | Void Collection Type |         |
| VCT | 0                    | Unknown |
| VCT | 1                    | Relief  |
| VCT | 2                    | Other   |

## Appendix F. Hydrography Coverage

### Spring/Summer/Winter/Fall Water Characteristics Feature Class (4 feature classes)

ID

F-CODE/DESCRIPTION

BA000 Water Surface  
BA001 Water Column Profile

CRS

Current Rate (Speed)  
Current speed in knots.  
CRS 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

DEP

Depth of Reading  
The depth of the reading below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.  
HDP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

HDP

Hydrographic Depth  
The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.  
HDP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

SAL

Salinity at DEP  
Salinity in parts per thousand.  
SAL 0 Actual Value

| Units          | Format         | Range | Increment | Max Char |
|----------------|----------------|-------|-----------|----------|
| Parts/thousand | Floating Point |       |           |          |

SOV

Sound Speed at DEP  
Sound speed in meters per second.  
SOV 0 Actual Value

| Units      | Format         | Range | Increment | Max Char |
|------------|----------------|-------|-----------|----------|
| meters/sec | Floating Point |       |           |          |

ST1

Surface Temperature (month 1)  
Surface Temperature in first month of season.

|     |   |                |              |                  |                 |
|-----|---|----------------|--------------|------------------|-----------------|
| ST1 | 0   | Actual Value   |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | deg C   | Floating Point |              |                  |                 |
| ST2 | Surface Temperature (month 2)<br>Surface Temperature in second month of season.<br>ST2 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | deg C   | Floating Point |              |                  |                 |
| ST3 | Surface Temperature (month 3)<br>Surface Temperature in third month of season.<br>ST3 0 Actual Value  |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | deg C   | Floating Point |              |                  |                 |
| TEM | Temperature at DEP<br>Temperature at specified depth DEP.<br>TEM 0 Actual Value                       |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | deg C   | Floating Point |              |                  |                 |

## General Hydrography (except inland) Feature Class

ID

### F-CODE/DESCRIPTION

BA040 Water (Except Inland)  
An area of water which normally has tidal fluctuations

ARA Area Coverage Attribute  
The absolute area within the delineation of the feature.  
ARA 0 Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Sq. Meters   | Short Integer | 0±32,767     | 1 M <sup>2</sup> |                 |
| Hectares     | Short Integer | 0±32,767     | 1 HA             |                 |

ATN Aids to Navigation

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

CUR Current Type Category  
CUR 0 Unknown

|     |  |               |                     |                  |                 |  |  |  |
|-----|--|---------------|---------------------|------------------|-----------------|--|--|--|
|     | CUR  | 1             | Ebb                 |                  |                 |  |  |  |
|     | CUR  | 2             | Flood               |                  |                 |  |  |  |
|     | CUR  | 3             | General Flow        |                  |                 |  |  |  |
|     | CUR  | 4             | River Flow          |                  |                 |  |  |  |
|     | CUR  | 5             | Ocean Flow          |                  |                 |  |  |  |
|     | CUR  | 999           | Other               |                  |                 |  |  |  |
| CRS | Current Rate (Speed)   |               |                     |                  |                 |  |  |  |
|     | Current speed in knots.  |               |                     |                  |                 |  |  |  |
|     | CRS  | 0             | Actual Value        |                  |                 |  |  |  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>        | <u>Increment</u> | <u>Max Char</u> |  |  |  |
|     | Knots  |               | Floating Point      | 0.1 KNOT         |                 |  |  |  |
| DAN | Description of Aids to Navigation  |               |                     |                  |                 |  |  |  |
|     | Textual description of aids to navigation marking a feature, e.g. Marked by buoys. |               |                     |                  |                 |  |  |  |
|     | DAN  | 0             | Actual Value        |                  |                 |  |  |  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>        | <u>Increment</u> | <u>Max Char</u> |  |  |  |
|     | Text String  |               | Lexical             |                  | 256             |  |  |  |
| DOF | Direction of Flow  |               |                     |                  |                 |  |  |  |
|     | Bearing of movement or direction of the flow.                                      |               |                     |                  |                 |  |  |  |
|     | DOF  | 0             | Actual Value        |                  |                 |  |  |  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>        | <u>Increment</u> | <u>Max Char</u> |  |  |  |
|     | Degrees  |               | Short Integer       | 0-359            | 1 DEG           |  |  |  |
| DR1 | Depth Range Value 1 (minimum depth)  |               |                     |                  |                 |  |  |  |
|     | Minimum value of a depth range.  |               |                     |                  |                 |  |  |  |
|     | DR1  | 0             | Actual Value        |                  |                 |  |  |  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>        | <u>Increment</u> | <u>Max Char</u> |  |  |  |
|     | Meters   |               | Short Integer       | 0±32,767         | 1 M             |  |  |  |
| DR2 | Depth Range Value 2 (maximum depth)  |               |                     |                  |                 |  |  |  |
|     | Maximum value of a depth range.  |               |                     |                  |                 |  |  |  |
|     | DR2  | 0             | Actual Value        |                  |                 |  |  |  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>        | <u>Increment</u> | <u>Max Char</u> |  |  |  |
|     | Meters   |               | Short Integer       | 0±32,767         | 1 M             |  |  |  |
| DW1 | Depth of Water 1 (predominant depth - first range)                                 |               |                     |                  |                 |  |  |  |
|     | DW1  | 0             | Unknown             |                  |                 |  |  |  |
|     | DW1  | 1             | ≤ 0.8 M             |                  |                 |  |  |  |
|     | DW1  | 2             | > 0.8 M and ≤ 1.6 M |                  |                 |  |  |  |
|     | DW1  | 3             | > 1.6 M and ≤ 2.4 M |                  |                 |  |  |  |
|     | DW1  | 4             | > 2.4 M             |                  |                 |  |  |  |
|     | DW1  | 5             | NA                  |                  |                 |  |  |  |
| DW2 | Depth of Water 2 (predominant depth - second range)                                |               |                     |                  |                 |  |  |  |
|     | DW2  | 0             | Unknown             |                  |                 |  |  |  |

|     |   |                     |
|-----|---|---------------------|
| DW2 | 1 | ≤ 1.6 M             |
| DW2 | 2 | > 1.6 M and ≤ 2.4 M |
| DW2 | 3 | > 2.4 M             |
| DW2 | 4 | NA                  |

#### EXS

##### Existence Category

The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

#### LEN

##### Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

|     |   |              |
|-----|---|--------------|
| LEN | 0 | Actual Value |
|-----|---|--------------|

|     | Units  | Format        | Range    | Increment | Max Char |
|-----|--|---------------|----------|-----------|----------|
|     | Meters   | Short Integer | 0±32,767 | 1 M       |          |
| NAM | Name<br>Any Identifier or code.  |               |          |           |          |
| NAM | 0  | Actual Value  |          |           |          |
|     | Units  | Format        | Range    | Increment | Max Char |
|     | Text String  | Lexical       |          |           | 80       |
| WID | Width<br>A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments. |               |          |           |          |
| WID | 0  | Actual Value  |          |           |          |
|     | Units  | Format        | Range    | Increment | Max Char |
|     | Meters   | Short Integer | 0±32,767 | 1 M       |          |

### Coastal Hydrography Feature Class

ID

F-CODE/DESCRIPTION

- BA010 Coastline/Shoreline  
The line where a land mass is in contact with a body of water
- BA020 Foreshore  
That part of the shore or beach which lies between the low water mark and the coastline/shoreline. The same condition may exist in non-contiguous off-shore areas.
- BA030 Island  
A land mass smaller than a continent and surrounded by water.
- BA051 Dike Crown  
The dike is an artificial embankment to contain or hold back water.  
The dike crown is the topline of the dike.

AFA

Available Facilities

Facilities available at or in the near vicinity.

- AFA 0 Unknown
- AFA 1 Visitors Berth
- AFA 2 Visitors Mooring
- AFA 3 Sailmaker
- AFA 4 Chandler
- AFA 5 Provisions
- AFA 6 Physician/Doctor
- AFA 7 Pharmacy/Chemist
- AFA 8 Drinking Water
- AFA 9 Fuel Station
- AFA 10 Electricity
- AFA 11 Bottle Gas/LPG
- AFA 12 Showers

|     |     |                  |
|-----|-----|------------------|
| AFA | 13  | Laundrette       |
| AFA | 14  | Toilets          |
| AFA | 15  | Post Box         |
| AFA | 16  | Public Telephone |
| AFA | 17  | Refuse Bin       |
| AFA | 18  | Water Police     |
| AFA | 19  | Helipad          |
| AFA | 20  | Ticket Sales     |
| AFA | 21  | No Ticket Sales  |
| AFA | 22  | Yatch Club       |
| AFA | 23  | Boat Hoist       |
| AFA | 24  | Boat Yard        |
| AFA | 25  | Public Inn       |
| AFA | 26  | Restaurant       |
| AFA | 999 | Other            |

ARA Area Coverage Attribute  
The absolute area within the delineation of the feature.  
ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

ACC Accuracy Category  
Accuracy of geographic position.  
ACC 0 Unknown  
ACC 1 Accurate  
ACC 2 Approximate  
ACC 3 Doubtful  
ACC 5 Disputed  
ACC 6 Undisputed  
ACC 7 Precise  
ACC 8 Abrogated

C80 Rate of Current  
Rate of current flow at high water.  
C80 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

C81 Rate of Current 1  
Rate of current flow 1 hour after high water.  
C81 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

C82 Rate of Current 2  
Rate of current flow 2 hours after high water.  
C82 0 Actual Value



|     |   |                |              |                  |                 |
|-----|---|----------------|--------------|------------------|-----------------|
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C83 | Rate of Current 3<br>Rate of current flow 3 hours after high water.<br>C83 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C84 | Rate of Current 4<br>Rate of current flow 4 hours after high water.<br>C84 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C85 | Rate of Current 5<br>Rate of current flow 5 hours after high water.<br>C85 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C86 | Rate of Current 6<br>Rate of current flow 6 hours after high water.<br>C86 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C87 | Rate of Current 7<br>Rate of current flow 7 hours after high water.<br>C87 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C88 | Rate of Current 8<br>Rate of current flow 8 hours after high water.<br>C88 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C89 | Rate of Current 9<br>Rate of current flow 9 hours after high water.<br>C89 0 Actual Value |                |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Knots   | Floating Point |              | 0.1 KNOT         |                 |
| C90 | Rate of Current 10<br>Rate of current flow 10 hours after high water.                     |                |              |                  |                 |

|     |   |   |                |              |  |                  |                 |  |
|-----|---|---|----------------|--------------|--|------------------|-----------------|--|
|     | C90   | 0 | Actual Value   |              |  |                  |                 |  |
|     | <u>Units</u>  |   | <u>Format</u>  | <u>Range</u> |  | <u>Increment</u> | <u>Max Char</u> |  |
|     | Knots   |   | Floating Point |              |  | 0.1 KNOT         |                 |  |
| C91 | Rate of Current 11<br>Rate of current flow 11 hours after high water.   |   |                |              |  |                  |                 |  |
|     | C91   | 0 | Actual Value   |              |  |                  |                 |  |
|     | <u>Units</u>  |   | <u>Format</u>  | <u>Range</u> |  | <u>Increment</u> | <u>Max Char</u> |  |
|     | Knots   |   | Floating Point |              |  | 0.1 KNOT         |                 |  |
| CFD | Cultural Feature Density<br>The measure of the concentration of buildings and other cultural features within the delineation of this feature.     |   |                |              |  |                  |                 |  |
|     | CFD   | 0 | Actual Value   |              |  |                  |                 |  |
|     | <u>Units</u>  |   | <u>Format</u>  | <u>Range</u> |  | <u>Increment</u> | <u>Max Char</u> |  |
|     | Percent   |   | Short Integer  | 0-100        |  | 1 %              |                 |  |
| COD | Certainty of Delineation<br>COD 0 Unknown<br>COD 1 Limits and Information Known<br>COD 2 Limits and Information Unknown                           |   |                |              |  |                  |                 |  |
| CRN | Current Rate Minimum<br>Minimum speed of current.<br>CRN 0 Actual Value   |   |                |              |  |                  |                 |  |
|     | <u>Units</u>  |   | <u>Format</u>  | <u>Range</u> |  | <u>Increment</u> | <u>Max Char</u> |  |
|     | Knots   |   | Floating Point |              |  | 0.1 KNOT         |                 |  |
| CRS | Current Rate (Speed)<br>Current speed in knots.<br>CRS 0 Actual Value   |   |                |              |  |                  |                 |  |
|     | <u>Units</u>  |   | <u>Format</u>  | <u>Range</u> |  | <u>Increment</u> | <u>Max Char</u> |  |
|     | Knots   |   | Floating Point |              |  | 0.1 KNOT         |                 |  |
| CRX | Current Rate Maximum<br>Maximum speed of current.<br>CRX 0 Actual Value   |   |                |              |  |                  |                 |  |
|     | <u>Units</u>  |   | <u>Format</u>  | <u>Range</u> |  | <u>Increment</u> | <u>Max Char</u> |  |
|     | Knots   |   | Floating Point |              |  | 0.1 KNOT         |                 |  |
| CUR | Current Type Category<br>CUR 0 Unknown<br>CUR 1 Ebb<br>CUR 2 Flood<br>CUR 3 General Flow<br>CUR 4 River Flow<br>CUR 5 Ocean Flow<br>CUR 999 Other |   |                |              |  |                  |                 |  |

|     |   |               |              |                                  |
|-----|---|---------------|--------------|----------------------------------|
| D80 | Direction of Current<br>Direction of current flow at high water.<br>D80 0 Actual Value              |               |              |                                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Degrees   | Short Integer | 0-359        | 1 DEG                            |
| D81 | Direction of Current 1<br>Direction of current flow 1 hour after high water.<br>D81 0 Actual Value  |               |              |                                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Degrees   | Short Integer | 0-359        | 1 DEG                            |
| D82 | Direction of Current 2<br>Direction of current flow 2 hours after high water.<br>D82 0 Actual Value |               |              |                                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Degrees   | Short Integer | 0-359        | 1 DEG                            |
| D83 | Direction of Current 3<br>Direction of current flow 3 hours after high water.<br>D83 0 Actual Value |               |              |                                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Degrees   | Short Integer | 0-359        | 1 DEG                            |
| D84 | Direction of Current 4<br>Direction of current flow 4 hours after high water.<br>D84 0 Actual Value |               |              |                                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Degrees   | Short Integer | 0-359        | 1 DEG                            |
| D85 | Direction of Current 5<br>Direction of current flow 5 hours after high water.<br>D85 0 Actual Value |               |              |                                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Degrees   | Short Integer | 0-359        | 1 DEG                            |
| D86 | Direction of Current 6<br>Direction of current flow 6 hours after high water.<br>D86 0 Actual Value |               |              |                                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Degrees   | Short Integer | 0-359        | 1 DEG                            |
| D87 | Direction of Current 7<br>Direction of current flow 7 hours after high water.<br>D87 0 Actual Value |               |              |                                  |

|     | Units   | Format        | Range | Increment | Max Char |
|-----|---|---------------|-------|-----------|----------|
|     | Degrees   | Short Integer | 0-359 | 1 DEG     |          |
| D88 | Direction of Current 8<br>Direction of current flow 8 hours after high water.<br>D88 0 Actual Value   |               |       |           |          |
|     | Units   | Format        | Range | Increment | Max Char |
|     | Degrees   | Short Integer | 0-359 | 1 DEG     |          |
| D89 | Direction of Current 9<br>Direction of current flow 9 hours after high water.<br>D89 0 Actual Value   |               |       |           |          |
|     | Units   | Format        | Range | Increment | Max Char |
|     | Degrees   | Short Integer | 0-359 | 1 DEG     |          |
| D90 | Direction of Current 10<br>Direction of current flow 10 hours after high water.<br>D90 0 Actual Value   |               |       |           |          |
|     | Units   | Format        | Range | Increment | Max Char |
|     | Degrees   | Short Integer | 0-359 | 1 DEG     |          |
| D91 | Direction of Current 11<br>Direction of current flow 11 hours after high water.<br>D91 0 Actual Value   |               |       |           |          |
|     | Units   | Format        | Range | Increment | Max Char |
|     | Degrees   | Short Integer | 0-359 | 1 DEG     |          |
| EXS | Existence Category<br>The state or condition of the feature.<br>EXS 0 Unknown<br>EXS 1 Definite<br>EXS 2 Doubtful<br>EXS 3 Reported<br>EXS 5 Under Construction<br>EXS 6 Abandoned/Disused<br>EXS 7 Destroyed<br>EXS 10 Proposed<br>EXS 11 Temporary<br>EXS 12 Alternate<br>EXS 18 Permanent<br>EXS 25 Not Maintained<br>EXS 26 Maintained<br>EXS 27 Closed/Locked<br>EXS 28 Operational<br>EXS 30 Not Isolated<br>EXS 31 Isolated<br>EXS 33 Ruined<br>EXS 35 Other<br>EXS 44 Approximate/About<br>EXS 45 Natural |               |       |           |          |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

LEN Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

MAC Maritime Area Category

|     |    |  |
|-----|----|--|
| MAC | 0  | Unknown                                      |
| MAC | 1  | Customs Area                                 |
| MAC | 2  | Dredged Channel/ Dredged Area                |
| MAC | 3  | Harbor Area                                  |
| MAC | 4  | Mine Danger Area                             |
| MAC | 5  | Prohibited Shipping Area/Entry Prohibited    |
| MAC | 6  | Reclamation Area                             |
| MAC | 7  | Restricted Area                              |
| MAC | 9  | Works in progress area                       |
| MAC | 10 | Wire Drag Area/Swept Area                    |
| MAC | 11 | Anchorage (general)                          |
| MAC | 12 | Anchoring Berths                             |
| MAC | 13 | Explosive anchorage                          |
| MAC | 14 | Large Vessel/Deep Water/Deep Draft anchorage |
| MAC | 15 | Anchoring Prohibited                         |
| MAC | 16 | Quarantine anchorage                         |
| MAC | 17 | Reserved Anchorage                           |
| MAC | 18 | Small Vessel Anchorage/Marina                |
| MAC | 19 | Tanker Anchorage                             |
| MAC | 20 | Submarine Cable Area                         |
| MAC | 21 | Pipeline Area                                |
| MAC | 22 | Fishing Prohibited                           |
| MAC | 23 | Cable and Pipeline Area                      |
| MAC | 24 | Turning Area / Swinging Circle               |
| MAC | 25 | Spoil Area / Spoil Ground                    |

|     |    |  |
|-----|----|--|
| MAC | 26 | Unsurveyed Area                        |
| MAC | 27 | Submarine Exercise Area                |
| MAC | 28 | Mine Laying Practice Area              |
| MAC | 29 | Firing Danger Area                     |
| MAC | 30 | Dumping Ground for Hazardous Materials |
| MAC | 31 | Incineration Area                      |
| MAC | 32 | Oil field                              |
| MAC | 33 | Gas Field                              |
| MAC | 34 | Historic Wreck                         |
| MAC | 35 | Explosive Dumping Ground               |
| MAC | 36 | Former Mine Danger Area                |
| MAC | 37 | Safety Zone                            |
| MAC | 38 | Chemical field                         |
| MAC | 39 | Separation Zone                        |
| MAC | 40 | Roundabout Zone (TSS)                  |
| MAC | 41 | Inshore Traffic Zone (TSS)             |
| MAC | 42 | Precautionary Area                     |
| MAC | 43 | Areas to be avoided                    |
| MAC | 44 | Degaussing Range                       |
| MAC | 45 | Outfall area                           |
| MAC | 46 | Intake area                            |
| MAC | 47 | Fish Haven/Protected Area              |
| MAC | 48 | Pilot Boarding Area                    |
| MAC | 49 | Cargo Transshipment Area               |
| MAC | 50 | Red Rocks                              |
| MAC | 51 | Laterite                               |
| MAC | 52 | Evaporites                             |
| MAC | 53 | Seaplane                               |
| MAC | 54 | Time Limited                           |
| MAC | 55 | Fairway                                |
| MAC | 56 | Fish Trap Area                         |
| MAC | 57 | Marine farm                            |
| MAC | 58 | Dredging area                          |
| MAC | 61 | Sewer Area                             |
| MAC | 79 | Free Port Area                         |
| MAC | 80 | Fish Sanctuary                         |
| MAC | 81 | Degaussing Range                       |
| MAC | 82 | Development Area                       |
| MAC | 83 | Diving prohibited zone                 |
| MAC | 84 | Danger of stranding area               |
| MAC | 85 | Navigational aid safety zone           |
| MAC | 86 | Historic wreck restricted area         |
| MAC | 87 | Seal sanctuary                         |
| MAC | 88 | Game preserve                          |
| MAC | 89 | Bird sanctuary                         |
| MAC | 90 | Nature preserve                        |
| MAC | 91 | Practice area in general               |
| MAC | 92 | Torpedo practice area                  |
| MAC | 93 | Anchorage for up to 24 hours           |
| MAC | 94 | Small craft mooring area               |
| MAC | 95 | Seaplane anchorage                     |
| MAC | 96 | Unrestricted anchorage                 |
| MAC | 97 | Crossing (TSS)                         |
| MAC | 98 | Offshore Production Area               |

MAC 99 Dock Area  
MAC 999 Other

MED Median Category  
MED 0 Unknown  
MED 1 With Median  
MED 2 Without Median  
MED 998 Not Applicable  
MED 999 Other

NAM Name  
Any Identifier or code.  
NAM 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

PRO Product Category  
PRO 0 Unknown  
PRO 5 Asphalt  
PRO 13 Chemical  
PRO 22 Conglomerate  
PRO 26 Desalinated Water  
PRO 30 Earthen  
PRO 31 Electric  
PRO 33 Explosives  
PRO 35 Food  
PRO 38 Gas  
PRO 39 Gasoline  
PRO 50 Heat  
PRO 52 Lava  
PRO 67 Oil  
PRO 69 Ooze  
PRO 82 Radioactive Material  
PRO 102 Sludge  
PRO 116 Water  
PRO 128 Refuse  
PRO 130 None  
PRO 132 Not Applicable  
PRO 133 Telecommunications  
PRO 997 Not Applicable  
PRO 998 Multiple  
PRO 999 Other

RDT Road Type  
RDT 0 Unknown  
RDT 1 Street  
RDT 2 Rapid transit  
RDT 3 Laneway  
RDT 4 Service Lane  
RDT 998 Not applicable  
RDT 999 Other

RST Road/Runway Surface Type

|     |     |                  |
|-----|-----|------------------|
| RST | 0   | Unknown          |
| RST | 1   | Hard /Paved      |
| RST | 2   | Loose /Unpaved   |
| RST | 3   | Loose /Light     |
| RST | 4   | Corduroy         |
| RST | 5   | Grass/Sod (Soft) |
| RST | 6   | Natural          |
| RST | 7   | Permanent        |
| RST | 8   | Temporary        |
| RST | 998 | Not Applicable   |
| RST | 999 | Other            |

|     |                    |                 |
|-----|--------------------|-----------------|
| RTC | Road Type Category |                 |
| RTC | 0                  | Unknown         |
| RTC | 1                  | NATO Category X |
| RTC | 2                  | NATO Category Y |
| RTC | 3                  | NATO Category Z |

|     |                   |                     |
|-----|-------------------|---------------------|
| SEA | Sea Area Category |                     |
| SEA | 0                 | Undefined           |
| SEA | 1                 | Sea area in general |
| SEA | 2                 | Gat                 |
| SEA | 3                 | Bank                |
| SEA | 4                 | Deep                |
| SEA | 5                 | Bay                 |
| SEA | 6                 | Beach               |
| SEA | 7                 | Basin               |
| SEA | 8                 | Watt                |

|     |                    |                        |
|-----|--------------------|------------------------|
| SHO | Shoreline Category |                        |
| SHO | 1                  | Hillocks               |
| SHO | 2                  | Flat                   |
| SHO | 3                  | Sandy                  |
| SHO | 4                  | Stony or shingly shore |
| SHO | 5                  | Artificial             |

|     |                |                |
|-----|----------------|----------------|
| SLT | Shoreline Type |                |
| SLT | 0              | Unknown        |
| SLT | 6              | Mangrove/Nipa  |
| SLT | 8              | Marsh, Swamp   |
| SLT | 10             | Rocky          |
| SLT | 11             | Rubble         |
| SLT | 14             | Stony, Shingly |
| SLT | 15             | Other          |

|     |                           |                 |
|-----|---------------------------|-----------------|
| SMC | Surface Material Category |                 |
| SMC | 120                       | Sand and Gravel |
| SMC | 121                       | Rip-rap         |
| SMC | 198                       | Kelp            |
| SMC | 199                       | Sandwaves       |

|     |                               |                             |
|-----|-------------------------------|-----------------------------|
| SRD | Surface Roughness Description |                             |
| SRD | 0                             | Unknown                     |
| SRD | 1                             | No surface roughness effect |



|     |    |   |
|-----|----|---|
| SRD | 2  | Area of high landslide potential                            |
| SRD | 3  | Uncohesive surface material/flat                            |
| SRD | 4  | Rough   |
| SRD | 5  | Angular   |
| SRD | 6  | Rounded   |
| SRD | 11 | Surface of numerous cobbles and boulders                    |
| SRD | 12 | Areas of stony terrain                                      |
| SRD | 13 | Stony soil with surface rock                                |
| SRD | 14 | Stony soil with scattered boulders                          |
| SRD | 15 | Stony soil with numerous boulders                           |
| SRD | 16 | Numerous boulders   |
| SRD | 17 | Numerous rock outcrops and/or stony soil                    |
| SRD | 18 | Area of scattered boulders                                  |
| SRD | 19 | Talus slope   |
| SRD | 20 | Boulder Fields  |
| SRD | 31 | Highly fractured rock surface                               |
| SRD | 32 | Weathered lava flows  |
| SRD | 33 | Unweathered lava flows                                      |
| SRD | 34 | Stony soil with numerous rock outcrops                      |
| SRD | 35 | Irregular surface with deep fractures of foliation          |
| SRD | 36 | Rugged terrain with numerous rock outcrops                  |
| SRD | 37 | Rugged bedrock surface                                      |
| SRD | 38 | Sand dunes  |
| SRD | 39 | Sand dunes / low  |
| SRD | 40 | Sand dunes/ high  |
| SRD | 41 | Active sand dunes   |
| SRD | 42 | Stabilized sand dunes                                       |
| SRD | 43 | Highly distorted area, sharp rocky ridges                   |
| SRD | 51 | Stony soil cut by numerous gullies                          |
| SRD | 52 | Moderately dissected terrain                                |
| SRD | 53 | Moderately dissected terrain with scattered rock outcrops   |
| SRD | 54 | Dissected floodplain  |
| SRD | 55 | Highly dissected terrain                                    |
| SRD | 56 | Area with deep erosional gullies                            |
| SRD | 57 | Steep, rugged, dissected terrain with narrow gullies        |
| SRD | 58 | Karst/areas of numerous sinkholes and solution valleys      |
| SRD | 59 | Karst/area of numerous sinkholes                            |
| SRD | 60 | Karst/hummocky terrain covered with large conical hills     |
| SRD | 61 | Karst/hummocky terrain covered with low, broad-based mounds |
| SRD | 62 | Arroyo/wadi/wash  |
| SRD | 63 | Playa/dry lake  |
| SRD | 64 | Area of numerous meander scars and/or oxbow lakes           |
| SRD | 65 | Solifluction lobes and frost scars                          |
| SRD | 66 | Hummocky ground, areas of frost heaving                     |
| SRD | 67 | Area of frost polygons                                      |
| SRD | 68 | Area containing sabkhas                                     |
| SRD | 69 | Area of numerous small lakes and ponds                      |
| SRD | 70 | Area of numerous crevasses                                  |
| SRD | 81 | Area of numerous terraces                                   |
| SRD | 82 | Quarries  |
| SRD | 83 | Strip mines   |
| SRD | 84 | Quarry/gravel pit   |
| SRD | 85 | Quarry/sand pit   |

|     |                             |     |   |
|-----|-----------------------------|-----|---|
|     | SRD                         | 86  | Mine tailings/waste piles                       |
|     | SRD                         | 87  | Salt evaporators                                |
|     | SRD                         | 88  | Area of numerous dikes                          |
|     | SRD                         | 89  | Area of numerous diked fields                   |
|     | SRD                         | 90  | Area of numerous fences                         |
|     | SRD                         | 91  | Area of numerous stone walls                    |
|     | SRD                         | 92  | Area of numerous man-made canals/drains/ditches |
|     | SRD                         | 93  | Area of numerous terraced fields                |
|     | SRD                         | 94  | Parallel earthen mounds (row crops)             |
|     | SRD                         | 95  | Area of numerous hedgerows                      |
| TID | Tidal/Non-Tidal Category    |     |   |
|     | TID                         | 1   | Non-Tidal                                       |
|     | TID                         | 2   | Tidal / Tidal fluctuating                       |
| TRA | Traversability              |     |   |
|     | TRA                         | 0   | Unknown   |
|     | TRA                         | 1   | Traversability                                  |
|     | TRA                         | 2   | Non-Traversable                                 |
|     | TRA                         | 999 | Other   |
| TUC | Transportation Use Category |     |   |
|     | TUC                         | 0   | Unknown   |
|     | TUC                         | 1   | Both Road and Railroad                          |
|     | TUC                         | 2   | Highway   |
|     | TUC                         | 3   | Railroad  |
|     | TUC                         | 4   | Road  |
|     | TUC                         | 6   | Street  |
|     | TUC                         | 7   | Through Routes                                  |
|     | TUC                         | 8   | Air Traffic Control                             |
|     | TUC                         | 12  | Marine  |
|     | TUC                         | 13  | Air   |
|     | TUC                         | 14  | Bus   |
|     | TUC                         | 17  | Pedestrian                                      |
|     | TUC                         | 18  | Pipeline  |
|     | TUC                         | 19  | Animal  |
|     | TUC                         | 20  | Aircraft  |
|     | TUC                         | 21  | Ship  |
|     | TUC                         | 22  | Automotive                                      |
|     | TUC                         | 23  | Boat  |
|     | TUC                         | 24  | Bulk Motor Boat/Barge                           |
|     | TUC                         | 25  | VALUE INTENTIONALLY LEFT BLANK                  |
|     | TUC                         | 26  | Passenger                                       |
|     | TUC                         | 27  | Chair lift                                      |
|     | TUC                         | 28  | Ski tow   |
|     | TUC                         | 29  | Sleigh tow                                      |
|     | TUC                         | 30  | Cart tow  |
|     | TUC                         | 31  | Motor Cycle                                     |
|     | TUC                         | 32  | Bicycle   |
|     | TUC                         | 33  | Minerals  |
|     | TUC                         | 34  | Waterway  |
|     | TUC                         | 35  | No Transport Use                                |
|     | TUC                         | 36  | Slip Road/Access Road                           |
|     | TUC                         | 37  | Portage   |

|     |     |               |
|-----|-----|---------------|
| TUC | 38  | Canal         |
| TUC | 39  | Caravan Route |
| TUC | 40  | Subway        |
| TUC | 999 | Other         |

#### VDC

##### Vertical Datum Category

The reference line (0 elevation) from which heights and depths are measured.

|     |     |                                      |
|-----|-----|--------------------------------------|
| VDC | 0   | Unknown                              |
| VDC | 1   | VALUE INTENTIONALLY LEFT BLANK       |
| VDC | 2   | High Water                           |
| VDC | 3   | Higher High Water                    |
| VDC | 4   | Indian Spring Low Water              |
| VDC | 5   | Low Water                            |
| VDC | 6   | Lower Low Water                      |
| VDC | 7   | Mean High Water                      |
| VDC | 8   | Mean High Water Neaps                |
| VDC | 9   | Mean High Water Springs              |
| VDC | 10  | Mean Higher High Water               |
| VDC | 11  | Mean Low Water                       |
| VDC | 12  | Mean Low Water Neaps                 |
| VDC | 13  | Mean Low Water Springs               |
| VDC | 14  | Mean Lower Low Water                 |
| VDC | 15  | Mean Sea Level                       |
| VDC | 16  | Mean Tide Level                      |
| VDC | 17  | Neap Tide                            |
| VDC | 18  | Spring Tide                          |
| VDC | 19  | Mean Lower Low Water Springs         |
| VDC | 20  | Lowest Astronomical Tide             |
| VDC | 21  | Chart Datum (Unspecified)            |
| VDC | 22  | Highest Astronomical Tide            |
| VDC | 24  | Mean Higher Water                    |
| VDC | 26  | Highest Normal High Water            |
| VDC | 28  | Highest High Water                   |
| VDC | 30  | Indian Spring High Water             |
| VDC | 90  | Lowest low water                     |
| VDC | 91  | Lowest low water springs             |
| VDC | 92  | Approximate mean low water springs   |
| VDC | 93  | Low water springs                    |
| VDC | 94  | Approximate lowest astronomical tide |
| VDC | 95  | Nearly lowest low water              |
| VDC | 96  | Approximate mean low water           |
| VDC | 97  | Approximate mean lower low water     |
| VDC | 98  | Approximate mean sea level           |
| VDC | 99  | High water springs                   |
| VDC | 999 | Other                                |

#### WID

##### Width

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.

|     |   |              |
|-----|---|--------------|
| WID | 0 | Actual Value |
|-----|---|--------------|

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

## Ports and Harbors Feature Class

ID

### F-CODE/DESCRIPTION

- BB005 Harbor  
A natural or artificial improved body of water providing protection for vessels and anchorage and docking facilities.
- BB010 Anchorage  
An area of water where vessels anchor or may anchor
- BB012 Anchor Berth  
A designated area of water where a single vessel, sea plane, oil rig, etc. is anchored or may anchor
- BB020 Berth  
The place where a ship lies when secured to a pier, wharf, dolphin, or dock. It may be a designated place away from the coast line.
- BB022 Basin  
An enclosure containing water for a dock for ships.
- BB042 Mole  
A loading and discharge place for vessels. It is usually a substantial masonry structure, and often serves as a breakwater on its outer side while offering facilities for ships in its inner side.
- BB090 Dry-dock  
A structure, providing support for a vessel, which has a means of removing water so that the bottom of the vessel can be exposed.
- BB115 Gridiron  
A flat frame, usually of parallel timber baulks, erected on the foreshore so that a vessel may dry out on it for painting or repair at low water.
- BB190 Pier/Wharf/Quay  
A structure primarily used as berthing places for vessels.
- BB199 Floating Dock  
A dock which normally consists of a bottom pontoon, on which a ship can be lifted out of the water and two side walls to give stability to the bottom pontoon.
- BB200 Pump Out Facility  
A place on land where ships can pump out waste liquids.
- BB201 Small Craft Facility  
An installation with a certain function or service generally of interest for small craft or pleasure boats.
- BB220 Ramp (Maritime)  
A partially submerged hard surfaced area of a shoreline for launching and retrieving vessels or vehicles.
- BB240 Slipway/Patent Slip  
A prepared slope for launching and recovering vessels.
- BB250 Watering Place  
A place where vessels can replenish their water supply.
- BI005 Boat Lift  
A mechanical device for lifting vessels between two levels other than a lock.

**AFA****Available Facilities**

Facilities available at or in the near vicinity.

|     |     |                  |
|-----|-----|------------------|
| AFA | 0   | Unknown          |
| AFA | 1   | Visitors Berth   |
| AFA | 2   | Visitors Mooring |
| AFA | 3   | Sailmaker        |
| AFA | 4   | Chandler         |
| AFA | 5   | Provisions       |
| AFA | 6   | Physician/Doctor |
| AFA | 7   | Pharmacy/Chemist |
| AFA | 8   | Drinking Water   |
| AFA | 9   | Fuel Station     |
| AFA | 10  | Electricity      |
| AFA | 11  | Bottle Gas/LPG   |
| AFA | 12  | Showers          |
| AFA | 13  | Laundrette       |
| AFA | 14  | Toilets          |
| AFA | 15  | Post Box         |
| AFA | 16  | Public Telephone |
| AFA | 17  | Refuse Bin       |
| AFA | 18  | Water Police     |
| AFA | 19  | Helipad          |
| AFA | 20  | Ticket Sales     |
| AFA | 21  | No Ticket Sales  |
| AFA | 22  | Yatch Club       |
| AFA | 23  | Boat Hoist       |
| AFA | 24  | Boat Yard        |
| AFA | 25  | Public Inn       |
| AFA | 26  | Restaurant       |
| AFA | 999 | Other            |

**AOO****Angle of Orientation**

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

**ATN****Aids to Navigation**

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

**BER****Berth Identifier**

The designated number or letter used to identify this feature.

BER 0 Actual Value

|     | Units   | Format                         | Range | Increment | Max Char |
|-----|---|--------------------------------|-------|-----------|----------|
|     | Text String   | Lexical                        |       |           | 80       |
| BMC | Bottom Materials Composition  |                                |       |           |          |
| BMC | 0   | Unknown                        |       |           |          |
| BMC | 1   | Clay and Silt                  |       |           |          |
| BMC | 2   | Silty Sands                    |       |           |          |
| BMC | 3   | Sand and Gravel                |       |           |          |
| BMC | 4   | Gravel and Cobble              |       |           |          |
| BMC | 5   | Rocks and Boulders             |       |           |          |
| BMC | 6   | Bedrock                        |       |           |          |
| BMC | 7   | Paved                          |       |           |          |
| BMC | 8   | Peat                           |       |           |          |
| BMC | 9   | Sand over mud                  |       |           |          |
| BMC | 10  | Mixed qualities                |       |           |          |
| BMC | 11  | Coral                          |       |           |          |
| BMC | 12  | Slash                          |       |           |          |
| BMC | 13  | Seamount                       |       |           |          |
| BMC | 14  | Sand                           |       |           |          |
| COC | Conspicuous Category  |                                |       |           |          |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |       |           |          |
| COC | 0   | Unknown                        |       |           |          |
| COC | 1   | Conspicuous from sea           |       |           |          |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |       |           |          |
| COC | 3   | Radar Conspicuous from sea     |       |           |          |
| COC | 4   | Conspicuous from land          |       |           |          |
| COC | 5   | Conspicuous from air           |       |           |          |
| COC | 6   | Inconspicuous                  |       |           |          |
| COC | 7   | Generally Conspicuous          |       |           |          |
| COC | 8   | Not visual conspicuous         |       |           |          |
| COC | 9   | Visual conspicuous             |       |           |          |
| COC | 10  | Not radar conspicuous          |       |           |          |
| COC | 999   | Other                          |       |           |          |
| COD | Certainty of Delineation  |                                |       |           |          |
| COD | 0   | Unknown                        |       |           |          |
| COD | 1   | Limits and Information Known   |       |           |          |
| COD | 2   | Limits and Information Unknown |       |           |          |
| EXS | Existence Category  |                                |       |           |          |
|     | The state or condition of the feature.  |                                |       |           |          |
| EXS | 0   | Unknown                        |       |           |          |
| EXS | 1   | Definite                       |       |           |          |
| EXS | 2   | Doubtful                       |       |           |          |
| EXS | 3   | Reported                       |       |           |          |
| EXS | 5   | Under Construction             |       |           |          |
| EXS | 6   | Abandoned/Disused              |       |           |          |
| EXS | 7   | Destroyed                      |       |           |          |
| EXS | 10  | Proposed                       |       |           |          |
| EXS | 11  | Temporary                      |       |           |          |
| EXS | 12  | Alternate                      |       |           |          |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

#### FHC

##### Harbor Facility Classification

|     |    |                                    |
|-----|----|------------------------------------|
| FHC | 0  | Undefined                          |
| FHC | 1  | Ro-Ro terminal (Roll on, Roll off) |
| FHC | 2  | Timber yard                        |
| FHC | 3  | Ferry Terminal                     |
| FHC | 4  | Fishing harbor                     |
| FHC | 5  | Yacht harbor/marina                |
| FHC | 6  | Naval base                         |
| FHC | 7  | Tanker terminal                    |
| FHC | 8  | Passenger terminal                 |
| FHC | 9  | Shipyards                          |
| FHC | 10 | Container terminal                 |

#### FTR

##### Feature Rate

A quantified rate associated with a feature (e.g. Cars crossing a Bridge—AQ040). Units will be qualified using a structured text approach (e.g. 100(cars)[crossing bridge per hour] where the type of unit is in parentheses ( ) and a unit qualifier is in brackets [ ].)

|     |   |              |
|-----|---|--------------|
| FTR | 0 | Actual value |
|-----|---|--------------|

| Units           | Format     | Range | Increment | Max Char |
|-----------------|------------|-------|-----------|----------|
| Structured Text | ASCII Text |       |           | 80       |

#### HGT

##### Height Above Surface Level

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

ICC

Ice Classification

|     |     |                       |
|-----|-----|-----------------------|
| ICC | 0   | Undefined             |
| ICC | 1   | Fast ice              |
| ICC | 2   | Sea ice               |
| ICC | 3   | Growler area          |
| ICC | 4   | Pancake ice           |
| ICC | 5   | Glacier (see BJ030)   |
| ICC | 6   | Ice Peak (see BJ060)  |
| ICC | 7   | Pack ice (see BJ070)  |
| ICC | 8   | Polar ice (see BJ080) |
| ICC | 9   | Debris-covered        |
| ICC | 999 | Other                 |

LEN

Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

LOC

Location Category

Status of feature relative to surrounding area or water.

|     |    |  |
|-----|----|--|
| LOC | 0  | Unknown  |
| LOC | 1  | Above Surface/Does not Cover (Height Known)    |
| LOC | 2  | Awash at Chart Datum                           |
| LOC | 3  | Dries/Covers (Height Unknown)                  |
| LOC | 4  | Below Surface /Submerged/Underground           |
| LOC | 5  | Covered < 20 Meters                            |
| LOC | 6  | Covered <sup>3</sup> 20 Meters but < 30 Meters |
| LOC | 7  | Covered > = 30 Meters                          |
| LOC | 8  | On Ground Surface                              |
| LOC | 9  | Depth Known                                    |
| LOC | 10 | Depth Known ( Cleared by Drag Wire)            |
| LOC | 11 | Depth Unknown But Safe to Depth Shown          |
| LOC | 12 | VALUE INTENTIONALLY LEFT BLANK                 |
| LOC | 13 | Hull Showing                                   |
| LOC | 14 | Masts Showing                                  |
| LOC | 15 | On Water Surface/Floating                      |
| LOC | 16 | Partially Submerged                            |
| LOC | 17 | Sunken/on sea bottom                           |
| LOC | 19 | Above Surface/Does not Cover (Height Unknown)  |
| LOC | 20 | Funnel Showing                                 |
| LOC | 21 | Superstructure showing                         |
| LOC | 22 | Off Shore                                      |
| LOC | 23 | Below sea bottom                               |



|     |     |   |
|-----|-----|---|
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

|     |                        |   |
|-----|------------------------|---|
| MAC | Maritime Area Category |   |
| MAC | 0                      | Unknown                                       |
| MAC | 1                      | Customs Area                                  |
| MAC | 2                      | Dredged Channel/ Dredged Area                 |
| MAC | 3                      | Harbor Area                                   |
| MAC | 4                      | Mine Danger Area                              |
| MAC | 5                      | Prohibited Shipping Area/Entry Prohibited     |
| MAC | 6                      | Reclamation Area                              |
| MAC | 7                      | Restricted Area                               |
| MAC | 9                      | Works in progress area                        |
| MAC | 10                     | Wire Drag Area/Swept Area                     |
| MAC | 11                     | Anchorage (general)                           |
| MAC | 12                     | Anchoring Berths                              |
| MAC | 13                     | Explosive anchorage                           |
| MAC | 14                     | Large Vessel/Deep Water/Deep Draft anchorage. |
| MAC | 15                     | Anchoring Prohibited                          |
| MAC | 16                     | Quarantine anchorage                          |
| MAC | 17                     | Reserved Anchorage                            |
| MAC | 18                     | Small Vessel Anchorage/Marina                 |
| MAC | 19                     | Tanker Anchorage                              |
| MAC | 20                     | Submarine Cable Area                          |
| MAC | 21                     | Pipeline Area                                 |
| MAC | 22                     | Fishing Prohibited                            |
| MAC | 23                     | Cable and Pipeline Area                       |
| MAC | 24                     | Turning Area / Swinging Circle                |
| MAC | 25                     | Spoil Area / Spoil Ground                     |
| MAC | 26                     | Unsurveyed Area                               |
| MAC | 27                     | Submarine Exercise Area                       |
| MAC | 28                     | Mine Laying Practice Area                     |
| MAC | 29                     | Firing Danger Area                            |
| MAC | 30                     | Dumping Ground for Hazardous Materials        |
| MAC | 31                     | Incineration Area                             |
| MAC | 32                     | Oil field                                     |
| MAC | 33                     | Gas Field                                     |
| MAC | 34                     | Historic Wreck                                |
| MAC | 35                     | Explosive Dumping Ground                      |
| MAC | 36                     | Former Mine Danger Area                       |
| MAC | 37                     | Safety Zone                                   |

|     |     |                                |
|-----|-----|--------------------------------|
| MAC | 38  | Chemical field                 |
| MAC | 39  | Separation Zone                |
| MAC | 40  | Roundabout Zone (TSS)          |
| MAC | 41  | Inshore Traffic Zone (TSS)     |
| MAC | 42  | Precautionary Area             |
| MAC | 43  | Areas to be avoided            |
| MAC | 44  | Degaussing Range               |
| MAC | 45  | Outfall area                   |
| MAC | 46  | Intake area                    |
| MAC | 47  | Fish Haven/Protected Area      |
| MAC | 48  | Pilot Boarding Area            |
| MAC | 49  | Cargo Transshipment Area       |
| MAC | 50  | Red Rocks                      |
| MAC | 51  | Laterite                       |
| MAC | 52  | Evaporites                     |
| MAC | 53  | Seaplane                       |
| MAC | 54  | Time Limited                   |
| MAC | 55  | Fairway                        |
| MAC | 56  | Fish Trap Area                 |
| MAC | 57  | Marine farm                    |
| MAC | 58  | Dredging area                  |
| MAC | 61  | Sewer Area                     |
| MAC | 79  | Free Port Area                 |
| MAC | 80  | Fish Sanctuary                 |
| MAC | 81  | Degaussing Range               |
| MAC | 82  | Development Area               |
| MAC | 83  | Diving prohibited zone         |
| MAC | 84  | Danger of stranding area       |
| MAC | 85  | Navigational aid safety zone   |
| MAC | 86  | Historic wreck restricted area |
| MAC | 87  | Seal sanctuary                 |
| MAC | 88  | Game preserve                  |
| MAC | 89  | Bird sanctuary                 |
| MAC | 90  | Nature preserve                |
| MAC | 91  | Practice area in general       |
| MAC | 92  | Torpedo practice area          |
| MAC | 93  | Anchorage for up to 24 hours   |
| MAC | 94  | Small craft mooring area       |
| MAC | 95  | Seaplane anchorage             |
| MAC | 96  | Unrestricted anchorage         |
| MAC | 97  | Crossing (TSS)                 |
| MAC | 98  | Offshore Production Area       |
| MAC | 99  | Dock Area                      |
| MAC | 999 | Other                          |

|     |                               |                       |
|-----|-------------------------------|-----------------------|
| MCC | Material Composition Category |                       |
| MCC | 21                            | Concrete              |
| MCC | 62                            | Masonry (Brick/Stone) |
| MCC | 77                            | Prestressed Concrete  |
| MCC | 999                           | Other                 |

|     |                         |              |
|-----|-------------------------|--------------|
| NAM | Name                    |              |
|     | Any Identifier or code. |              |
| NAM | 0                       | Actual Value |

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

#### OPC

##### Offshore Platform Classification

|     |   |                                    |
|-----|---|------------------------------------|
| OPC | 0 | Undefined                          |
| OPC | 1 | Oil derrick / rig                  |
| OPC | 2 | Production platform                |
| OPC | 3 | Observation / research platform    |
| OPC | 4 | Articulated loading platform (ALP) |
| OPC | 5 | Single anchor leg mooring (SALM)   |
| OPC | 6 | Mooring tower                      |
| OPC | 7 | Artificial island                  |

#### PDR

##### Pedestrian Rate

Number of pedestrians per time unit (this attribute utilizes the structured text approach), e.g. 10(persons)[per hour].

|     |   |              |
|-----|---|--------------|
| PDR | 0 | Actual Value |
|-----|---|--------------|

| Units           | Format     | Range | Increment | Max Char |
|-----------------|------------|-------|-----------|----------|
| Structured Text | ASCII Text |       |           | 80       |

#### PRC

##### Periodic Restriction Category

|     |     |                                      |
|-----|-----|--------------------------------------|
| PRC | 1   | Perennially Open, Not Subject to Ice |
| PRC | 2   | Subject to Ice                       |
| PRC | 3   | Permanent Ice                        |
| PRC | 4   | Seasonal limit - Jan.                |
| PRC | 5   | Seasonal limit - Feb.                |
| PRC | 6   | Seasonal limit - Mar.                |
| PRC | 7   | Seasonal limit - Apr.                |
| PRC | 8   | Seasonal limit - May                 |
| PRC | 9   | Seasonal limit - Jun.                |
| PRC | 10  | Seasonal limit - Jul.                |
| PRC | 11  | Seasonal limit - Aug.                |
| PRC | 12  | Seasonal limit - Sep.                |
| PRC | 13  | Seasonal limit - Oct.                |
| PRC | 14  | Seasonal limit - Nov.                |
| PRC | 15  | Seasonal limit - Dec.                |
| PRC | 16  | Closed                               |
| PRC | 999 | Other                                |

#### SGO

##### Slope Gradient Orientation

The angular distance measured from true north (0 degrees) clockwise to the direction of maximum uphill slope of a feature.

|     |   |              |
|-----|---|--------------|
| SGO | 0 | Actual Value |
|-----|---|--------------|

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

#### SMC

##### Surface Material Category

|     |     |                 |
|-----|-----|-----------------|
| SMC | 120 | Sand and Gravel |
| SMC | 121 | Rip-rap         |
| SMC | 198 | Kelp            |
| SMC | 199 | Sandwaves       |

|     |   |   |
|-----|---|---|
| TIM | Time Attribute  |   |
|     | The time, expressed in hours of duration, for which an activity is permitted. |   |
|     | TIM   | 0 Actual Value  |
|     | <u>Units</u>  | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Char</u> |
|     | Hours   | Short Integer 0 - 24 1 H                                    |
| TXT | Text Attribute  |   |
|     | Narrative or other description.   |   |
|     | TXT   | 0 Actual Value  |
|     | <u>Units</u>  | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Char</u> |
|     | Text String   | Lexical 256   |
| USE | Usage   |   |
|     | Use (identifies the primary user, function, or controlling authority).        |   |
|     | USE   | 0 Unknown   |
|     | USE   | 1 VALUE INTENTIONALLY LEFT BLANK                            |
|     | USE   | 2 VALUE INTENTIONALLY LEFT BLANK                            |
|     | USE   | 3 VALUE INTENTIONALLY LEFT BLANK                            |
|     | USE   | 4 National  |
|     | USE   | 5 State   |
|     | USE   | 6 Private   |
|     | USE   | 7 Tribal  |
|     | USE   | 8 Military  |
|     | USE   | 9 VALUE INTENTIONALLY LEFT BLANK                            |
|     | USE   | 10 Other  |
|     | USE   | 11 Motel/Hotel  |
|     | USE   | 12 Apartment  |
|     | USE   | 13 Open   |
|     | USE   | 14 VALUE INTENTIONALLY LEFT BLANK                           |
|     | USE   | 15 VALUE INTENTIONALLY LEFT BLANK                           |
|     | USE   | 16 City   |
|     | USE   | 17 Advertising Billboard                                    |
|     | USE   | 18 Scoreboard   |
|     | USE   | 19 Highway Sign   |
|     | USE   | 20 Closed   |
|     | USE   | 21 Restricted   |
|     | USE   | 22 Joint Military/Civilian                                  |
|     | USE   | 23 International  |
|     | USE   | 24 Unidentified Aircraft Landing Area                       |
|     | USE   | 25 Federal  |
|     | USE   | 26 Primary/1st Order  |
|     | USE   | 30 Secondary/2nd Order                                      |
|     | USE   | 31 Tertiary/3rd Order                                       |
|     | USE   | 32 Insular  |
|     | USE   | 33 Provincial   |
|     | USE   | 37 Interstate   |
|     | USE   | 41 Industrial   |
|     | USE   | 42 Commercial   |
|     | USE   | 43 Institutional  |
|     | USE   | 44 Residential  |
|     | USE   | 45 Agricultural   |

|     |     |                                   |
|-----|-----|-----------------------------------|
| USE | 48  | Decoy                             |
| USE | 49  | Civilian/Public                   |
| USE | 50  | Limited                           |
| USE | 51  | Telegraph                         |
| USE | 52  | Telephone                         |
| USE | 53  | Power                             |
| USE | 57  | Marine                            |
| USE | 60  | Avalanche                         |
| USE | 61  | Refugee                           |
| USE | 62  | Prisoner                          |
| USE | 68  | Animal sanctuary                  |
| USE | 69  | Levee/Dike                        |
| USE | 70  | Reserve/Reservation               |
| USE | 73  | Terminus/Terminal                 |
| USE | 74  | Low Altitude enroute              |
| USE | 75  | High Altitude Enroute             |
| USE | 76  | Low and High Altitude Enroute     |
| USE | 77  | Short Take-off Landing Approach   |
| USE | 78  | Visual Approach                   |
| USE | 79  | Non-Precision Instrument Approach |
| USE | 80  | Precision Instrument Approach     |
| USE | 81  | Entry                             |
| USE | 82  | Exit                              |
| USE | 83  | Transaction                       |
| USE | 84  | Feeder                            |
| USE | 85  | Initial Approach Fix              |
| USE | 86  | Final Approach Fix                |
| USE | 87  | Visual Descent Point              |
| USE | 88  | Missed Approach Point             |
| USE | 89  | Radar                             |
| USE | 90  | Mileage Break Down                |
| USE | 91  | NAVAID Changeover                 |
| USE | 92  | Altimeter Change                  |
| USE | 93  | Compulsory Reporting Points       |
| USE | 94  | Non-Compulsory Reporting Points   |
| USE | 95  | Alert Apron/Hardstand             |
| USE | 96  | Operational Apron/Hardstand       |
| USE | 97  | Hanger/Apron                      |
| USE | 98  | Base Flight Apron                 |
| USE | 99  | Engine Test Pad/Apron             |
| USE | 100 | Transient Apron                   |
| USE | 101 | Depot Apron                       |
| USE | 102 | Stub Apron                        |
| USE | 103 | Dispersal Hardstand               |
| USE | 104 | Pad Hardstand                     |
| USE | 105 | Refueling Hardstand               |
| USE | 106 | Parking Hardstand                 |
| USE | 107 | Engine Run-up Hardstand           |
| USE | 108 | Firing-In Hardstand               |
| USE | 109 | Compass Rose Hardstand            |
| USE | 110 | Maintenance Hardstand             |
| USE | 111 | Quaternary/4th Order              |
| USE | 112 | Quinary/5th Order                 |
| USE | 113 | Regional                          |

|     |     |   |
|-----|-----|---|
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

VEC      Vehicle Capacity  
Number of vehicles that a feature can accommodate.  
VEC    0      Actual Value

| Units    | Format        | Range    | Increment | Max Char |
|----------|---------------|----------|-----------|----------|
| Vehicles | Short Integer | 0±32,767 | 1 VEHICLE |          |

VRR      Vertical Reference Category  
Relative location referenced to sounding datum, unless otherwise indicated.  
VRR    0      Unknown  
VRR    1      Above Surface/Does not cover (At High Water)  
VRR    2      Awash at Sounding Datum  
VRR    4      Below Surface/Submerged  
VRR    8      Covers and Uncovers  
VRR    9      Not Applicable

WAS      *Waste Liquids*

WID      Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For

a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

ZV2 Highest Z-Value

Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

### Miscellaneous Mooring Structures and Interests Feature Class

ID

F-CODE/DESCRIPTION

BB019 Anchor

An anchor is a heavy forging usually comprising a shank with a large shackle or ring at one end and two arms with palms at the other. Shaped as to grip the sea bottom, and by means of a cable or rope, it holds a vessel, boat, or any other floating structure in place.

BB030 Bollard

A post on a wharf used for fastening mooring lines.

BB040 Breakwater/Groyne

A structure which protects a harbor or beach from forces of the sea.

BB050 Calling-In Point

A specified point some distance from the harbor at which a vessel's navigator notifies the harbor authority of the ship's position.

BB079 Mooring/Warping Facility

A structure used for mooring/warping a ship or as protection for harbor constructions

BB080 Dolphin

A post or group of post used for mooring, warping a ship or as an aid to navigation.

BB081 Shoreline Construction

A fixed (not afloat) artificial structure attached to the land. Shoreline constructions are normally used for berthing and protection.

BB100 Fish Stakes

Poles or stakes placed in shallow water to catch fish.

BB105 Fishing Harbor

A harbor which is primarily used by fishing vessels.

BB110 Fish Traps/Fish Weirs

A fence or enclosure set in water to catch fish.

BB111 Tunny (Tuna) Nets Area

An area where nets used for catching tuna may be found

BB140 Jetty

A man-made barrier built out into, or in the water primarily to restrain or direct currents and waves.

BB150 Landing Place

- A place on shore where landing from the sea is possible.
- BB151 Landing Stairs  
Steps at the shoreline as the connection between land and water on different levels
- BB160 Mooring Ring  
A metal ring attached to a structure and used to secure a vessel.
- BB170 Offshore Loading Facility  
A facility located offshore for loading and unloading cargo.
- BB180 Oyster Bed/Mussel Bed  
A place in shallow water where oysters and mussels breed and may be cultivated.
- BB230 Seawall  
A structure built to protect the shore from erosion.
- SU003 Port Facility  
A building or section of building that is established to serve a particular purpose for water vehicles.

AOO Angle of Orientation  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

ATN Aids to Navigation

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

BFC Building Function Category  
Type or purpose of the building.

|     |    |  |
|-----|----|--|
| BFC | 0  | Unknown                                      |
| BFC | 1  | Fabrication Structures                       |
| BFC | 2  | Government Building                          |
| BFC | 3  | Capitol Building                             |
| BFC | 4  | Castle                                       |
| BFC | 5  | Government Administration Building           |
| BFC | 6  | Hospital                                     |
| BFC | 7  | House of Worship                             |
| BFC | 8  | Military Administration /Operations Building |
| BFC | 9  | Museum                                       |
| BFC | 10 | Observatory                                  |
| BFC | 11 | Palace                                       |
| BFC | 12 | Police Station                               |
| BFC | 13 | Prison                                       |
| BFC | 14 | Ranger Station                               |
| BFC | 15 | School                                       |
| BFC | 16 | House  |
| BFC | 17 | Multi Unit Dwelling                          |



|     |    |  |
|-----|----|--|
| BFC | 18 | Cemetery Building                              |
| BFC | 19 | Farm Building                                  |
| BFC | 20 | Greenhouse                                     |
| BFC | 21 | Garage   |
| BFC | 22 | Watermill /Gristmill                           |
| BFC | 23 | Wind Tunnel                                    |
| BFC | 24 | Warehouse                                      |
| BFC | 25 | Roundhouse                                     |
| BFC | 26 | Railroad Storage /Repair Facility              |
| BFC | 27 | Depot Terminal                                 |
| BFC | 28 | Administration Building                        |
| BFC | 29 | Aircraft Maintenance Shop                      |
| BFC | 30 | Hangar   |
| BFC | 31 | Customs House                                  |
| BFC | 33 | Health Office                                  |
| BFC | 34 | Firing Range                                   |
| BFC | 35 | Post Office                                    |
| BFC | 36 | Barracks/Dormitory                             |
| BFC | 37 | Fire Station                                   |
| BFC | 38 | Jail   |
| BFC | 39 | Guardhouse                                     |
| BFC | 40 | Telephone Switching Station                    |
| BFC | 50 | Church   |
| BFC | 51 | Market   |
| BFC | 52 | Town Hall                                      |
| BFC | 53 | Bank   |
| BFC | 54 | Service/Refueling Station                      |
| BFC | 55 | Yacht Club/Sailing Club                        |
| BFC | 56 | Public Inn                                     |
| BFC | 57 | Restaurant                                     |
| BFC | 58 | Observation                                    |
| BFC | 59 | Research and Development Lab/Research Facility |
| BFC | 60 | University/College                             |
| BFC | 61 | Courthouse                                     |
| BFC | 62 | Legation                                       |
| BFC | 63 | Mission  |
| BFC | 64 | Chancery                                       |
| BFC | 65 | Ambassadorial Residence                        |
| BFC | 66 | Embassy  |
| BFC | 67 | Consulate                                      |
| BFC | 68 | Guard House                                    |
| BFC | 69 | Guard Shack/Guard Room                         |
| BFC | 70 | Kennel   |
| BFC | 71 | Oil Mill (Vegetable)                           |
| BFC | 72 | Aerator  |
| BFC | 73 | Carpentry                                      |
| BFC | 74 | Saw-mill                                       |
| BFC | 75 | Kiln/Oven                                      |
| BFC | 76 | Signal Box/Railway Signalman's House           |
| BFC | 77 | Harbor Masters Office                          |
| BFC | 78 | Marine Police                                  |
| BFC | 79 | Rescue   |
| BFC | 80 | Port Control                                   |
| BFC | 81 | Maritime Station                               |

|     |     |                                  |
|-----|-----|----------------------------------|
| BFC | 82  | Lighthouse                       |
| BFC | 83  | Power Generation                 |
| BFC | 84  | Filtration Plant                 |
| BFC | 85  | News Paper Plant                 |
| BFC | 86  | Telephone Exchange (Main)        |
| BFC | 87  | Auditorium                       |
| BFC | 88  | Opera House                      |
| BFC | 89  | Processing/Treatment             |
| BFC | 90  | Pumphouse                        |
| BFC | 91  | Mobile Home                      |
| BFC | 92  | Weather Station                  |
| BFC | 93  | Dependents Housing/Bivouac Area  |
| BFC | 94  | Railroad Station                 |
| BFC | 95  | Hotel                            |
| BFC | 96  | Diplomatic Building              |
| BFC | 97  | Trading Post                     |
| BFC | 98  | Shed                             |
| BFC | 99  | Battery                          |
| BFC | 100 | Medical Center                   |
| BFC | 101 | Municipal Hall                   |
| BFC | 102 | Oil/Gas Facilities Building      |
| BFC | 103 | Outbuilding                      |
| BFC | 104 | Paper/Pulp Mill                  |
| BFC | 105 | Reformatory                      |
| BFC | 106 | Sanitorium                       |
| BFC | 107 | Satellite Tracking Station       |
| BFC | 108 | Seminary                         |
| BFC | 109 | Senior Citizen's Home            |
| BFC | 110 | Shipyards                        |
| BFC | 111 | Sportsplex                       |
| BFC | 112 | Steel Mill                       |
| BFC | 113 | Weigh Scale (Highway)            |
| BFC | 114 | Non-Christian Place of Worship   |
| BFC | 115 | Hostel                           |
| BFC | 116 | Factory                          |
| BFC | 117 | Motel                            |
| BFC | 118 | Community Center                 |
| BFC | 119 | City Hall                        |
| BFC | 120 | Automobile Plant                 |
| BFC | 121 | Armory                           |
| BFC | 122 | Shopping Center                  |
| BFC | 123 | Correctional Institute           |
| BFC | 124 | Repair Facility                  |
| BFC | 125 | Barn/Machinery Shed              |
| BFC | 126 | Astronomical Station             |
| BFC | 127 | Theater                          |
| BFC | 128 | Library                          |
| BFC | 723 | Combined Fire and Police Station |
| BFC | 999 | Other                            |

CCC

Color Code Category

|     |   |         |
|-----|---|---------|
| CCC | 0 | Unknown |
| CCC | 1 | Black   |
| CCC | 2 | Blue    |

|     |     |                                |
|-----|-----|--------------------------------|
| CCC | 3   | Brown                          |
| CCC | 4   | Gray                           |
| CCC | 5   | Green                          |
| CCC | 7   | Chocolate                      |
| CCC | 8   | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 9   | Orange                         |
| CCC | 10  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 11  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 12  | Red                            |
| CCC | 13  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 14  | Violet                         |
| CCC | 15  | White                          |
| CCC | 16  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 17  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 18  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 19  | Yellow                         |
| CCC | 20  | Red & White (RW)               |
| CCC | 21  | Red & Green (RG)               |
| CCC | 22  | Red & Black (RB)               |
| CCC | 23  | Red-Green-Red (RGR)            |
| CCC | 24  | Green & White (GW)             |
| CCC | 25  | Green & Red (GR)               |
| CCC | 26  | Green & Black (GB)             |
| CCC | 27  | Green-Red-Green (GRG)          |
| CCC | 28  | Green-Yellow-Black (GYB)       |
| CCC | 29  | Yellow & Black (YB)            |
| CCC | 30  | Yellow-Black-Yellow (YBY)      |
| CCC | 31  | Yellow & Red (YR)              |
| CCC | 32  | Yellow & Green (YG)            |
| CCC | 33  | Yellow-Red-White (YRW)         |
| CCC | 34  | Black & Yellow (BY)            |
| CCC | 35  | Black-Yellow-Black (BYB)       |
| CCC | 36  | Black-Red-Black (BRB)          |
| CCC | 37  | Black & White (BW)             |
| CCC | 38  | Black & Red (BR)               |
| CCC | 39  | Black & Green (BG)             |
| CCC | 40  | White & Red (WR)               |
| CCC | 41  | White & Orange (W Or)          |
| CCC | 42  | White & Green (WG)             |
| CCC | 43  | White & Black (WB)             |
| CCC | 44  | White & Yellow (WY)            |
| CCC | 45  | White-Red-Green (WRG)          |
| CCC | 46  | White-Green-White (WGW)        |
| CCC | 47  | Magenta                        |
| CCC | 48  | Amber                          |
| CCC | 49  | Buff                           |
| CCC | 50  | Nautical Purple                |
| CCC | 999 | Other                          |

|     |   |                          |
|-----|---|--------------------------|
| CHA | Light Characteristic Category                               |                          |
|     | The sequence, grouping, and distinctive character of light. |                          |
| CHA | 0   | Unknown                  |
| CHA | 1   | Alternating              |
| CHA | 2   | Composite Group Flashing |

|     |     |                                |
|-----|-----|--------------------------------|
| CHA | 3   | Composite Group Occulting      |
| CHA | 4   | Ultra Quick                    |
| CHA | 5   | Fixed                          |
| CHA | 6   | Fixed and Flashing             |
| CHA | 7   | Fixed and Group Flashing       |
| CHA | 8   | Flashing                       |
| CHA | 9   | Group Flashing                 |
| CHA | 10  | Group Occulting                |
| CHA | 11  | Interrupted Quick Flashing     |
| CHA | 12  | Interrupted Ultra Quick        |
| CHA | 13  | Interrupted Very Quick         |
| CHA | 14  | Isophase                       |
| CHA | 15  | Long-Flashing                  |
| CHA | 16  | Morse Code                     |
| CHA | 17  | Occulting                      |
| CHA | 19  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 20  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 21  | Lighted                        |
| CHA | 22  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 23  | Unlighted                      |
| CHA | 24  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 25  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 26  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 27  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 28  | Group Quick Flashing           |
| CHA | 29  | Group Very Quick               |
| CHA | 30  | Very Quick                     |
| CHA | 31  | Quick                          |
| CHA | 32  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 33  | Intensified                    |
| CHA | 34  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 35  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 36  | Directional                    |
| CHA | 37  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 38  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 39  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 40  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 41  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 42  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 43  | Directional Moiré              |
| CHA | 44  | Quick flashing                 |
| CHA | 45  | very quick flashing            |
| CHA | 46  | Flash / long flash             |
| CHA | 47  | Occulting / flash              |
| CHA | 48  | Fixed / long flash             |
| CHA | 49  | Occulting alternating          |
| CHA | 50  | Long flash alternating         |
| CHA | 51  | Flash alternating              |
| CHA | 52  | Group alternating              |
| CHA | 53  | 2 fixed (vertical)             |
| CHA | 54  | 2 fixed (horizontal)           |
| CHA | 55  | 3 fixed (vertical)             |
| CHA | 56  | 3 fixed (horizontal)           |
| CHA | 999 | Other                          |

**COC****Conspicuous Category**

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

**EXS****Existence Category**

The state or condition of the feature.

|     |    |                         |
|-----|----|-------------------------|
| EXS | 0  | Unknown                 |
| EXS | 1  | Definite                |
| EXS | 2  | Doubtful                |
| EXS | 3  | Reported                |
| EXS | 5  | Under Construction      |
| EXS | 6  | Abandoned/Disused       |
| EXS | 7  | Destroyed               |
| EXS | 10 | Proposed                |
| EXS | 11 | Temporary               |
| EXS | 12 | Alternate               |
| EXS | 18 | Permanent               |
| EXS | 25 | Not Maintained          |
| EXS | 26 | Maintained              |
| EXS | 27 | Closed/Locked           |
| EXS | 28 | Operational             |
| EXS | 30 | Not Isolated            |
| EXS | 31 | Isolated                |
| EXS | 33 | Ruined                  |
| EXS | 35 | Other                   |
| EXS | 44 | Approximate/About       |
| EXS | 45 | Natural                 |
| EXS | 46 | Man-made                |
| EXS | 47 | Swept                   |
| EXS | 48 | Controlled              |
| EXS | 49 | Non-Controlled          |
| EXS | 50 | Non-Tidal               |
| EXS | 51 | Tidal/Tidal Fluctuation |
| EXS | 52 | Dissipating             |
| EXS | 53 | Incomplete              |
| EXS | 54 | Antique/Ancient         |
| EXS | 55 | Unexamined/Unsurveyed   |
| EXS | 56 | Unattended/Unwatched    |
| EXS | 59 | Not Usable              |
| EXS | 60 | Indefinite (Shoreline)  |

EXS 61 Definite Shoreline  
 EXS 62 Partially Destroyed  
 EXS 65 Inactive  
 EXS 998 Not Applicable  
 EXS 999 Other

DF1 Direction of Traffic - 1  
 Direction of traffic, first occurrence.  
 DF1 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

DF2 Direction of Traffic - 2  
 Direction of traffic, second occurrence.  
 DF2 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

DF3 Direction of Traffic - 3  
 Direction of traffic, third occurrence.  
 DF3 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

DF4 Direction of Traffic - 4  
 Direction of traffic, fourth occurrence.  
 DF4 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

FTR Feature Rate  
 A quantified rate associated with a feature (e.g. Cars crossing a Bridge—AQ040). Units will be qualified using a structured text approach (e.g. 100(cars)[crossing bridge per hour] where the type of unit is in parentheses ( ) and a unit qualifier is in brackets [ ].)  
 FTR 0 Actual value

| Units           | Format     | Range | Increment | Max Char |
|-----------------|------------|-------|-----------|----------|
| Structured Text | ASCII Text |       |           | 80       |

HGT Height Above Surface Level  
 Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
 HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

LEN Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

## LOC

### Location Category

Status of feature relative to surrounding area or water.

|         |   |
|---------|---|
| LOC 0   | Unknown   |
| LOC 1   | Above Surface/Does not Cover (Height Known)       |
| LOC 2   | Awash at Chart Datum                              |
| LOC 3   | Dries/Covers (Height Unknown)                     |
| LOC 4   | Below Surface /Submerged/Underground              |
| LOC 5   | Covered < 20 Meters                               |
| LOC 6   | Covered ≥ 20 Meters but < 30 Meters               |
| LOC 7   | Covered ≥ 30 Meters                               |
| LOC 8   | On Ground Surface                                 |
| LOC 9   | Depth Known                                       |
| LOC 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC 11  | Depth Unknown But Safe to Depth Shown             |
| LOC 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC 13  | Hull Showing                                      |
| LOC 14  | Masts Showing                                     |
| LOC 15  | On Water Surface/Floating                         |
| LOC 16  | Partially Submerged                               |
| LOC 17  | Sunken/on sea bottom                              |
| LOC 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC 20  | Funnel Showing                                    |
| LOC 21  | Superstructure showing                            |
| LOC 22  | Off Shore   |
| LOC 23  | Below sea bottom                                  |
| LOC 24  | Suspended or elevated above sea bottom            |
| LOC 25  | Suspended/Elevation above Ground or Water Surface |
| LOC 28  | Masts and Funnel Showing                          |
| LOC 30  | Non-Floating                                      |
| LOC 31  | Elevated  |
| LOC 32  | Depressed   |
| LOC 33  | Not submerged                                     |
| LOC 34  | Inland  |
| LOC 35  | Overhead  |
| LOC 36  | Height Above Bottom                               |
| LOC 37  | Exact Position Known                              |
| LOC 38  | Exact Position Unknown                            |
| LOC 39  | Depth Unknown                                     |
| LOC 998 | Not applicable                                    |
| LOC 999 | Other   |

## MAS

### Maintainence Status

Indicates whether the feature is maintained.

|       |                |
|-------|----------------|
| MAS 1 | Maintained     |
| MAS 2 | Not Maintained |

|     |   |                      |
|-----|---|----------------------|
| MCC | Material Composition Category   |                      |
|     | MCC 21  | Concrete             |
|     | MCC 77  | Prestressed Concrete |
|     | MCC 107   | Steel                |
|     | MCC 117   | Wood                 |
|     | MCC 118   | Creosoted Timber     |
| MWF | Mooring/Warping Facility Classification   |                      |
|     | MWF 1   | Undefined            |
|     | MWF 2   | Dolphin              |
|     | MWF 3   | Deviation dolphin    |
|     | MWF 4   | Bollard              |
| NAM | Name  |                      |
|     | Any Identifier or code.   |                      |
|     | NAM 0   | Actual Value         |
|     | Units   | Format               |
|     | Text String   | Lexical              |
|     | Range   | Increment            |
| NSP | Number of Steps   |                      |
|     | Pedestrian Rate   |                      |
|     | Number of pedestrians per time unit (this attribute utilizes the structured text approach), e.g. 10(persons)[per hour]. |                      |
|     | PDR 0   | Actual Value         |
|     | Units   | Format               |
|     | Structured Text   | ASCII Text           |
| PDR | Range   |                      |
|     | Increment   |                      |
|     | Max Char  |                      |
|     | 80  |                      |
|     | Product Category  |                      |
|     | PRO 0   | Unknown              |
| PRO | PRO 5   | Asphalt              |
|     | PRO 13  | Chemical             |
|     | PRO 22  | Conglomerate         |
|     | PRO 26  | Desalinated Water    |
|     | PRO 30  | Earthen              |
|     | PRO 31  | Electric             |
|     | PRO 33  | Explosives           |
|     | PRO 35  | Food                 |
|     | PRO 38  | Gas                  |
|     | PRO 39  | Gasoline             |
|     | PRO 50  | Heat                 |
|     | PRO 52  | Lava                 |
|     | PRO 67  | Oil                  |
|     | PRO 69  | Ooze                 |
|     | PRO 82  | Radioactive Material |
|     | PRO 102   | Sludge               |
|     | PRO 116   | Water                |
|     | PRO 128   | Refuse               |
|     | PRO 130   | None                 |
|     | PRO 132   | Not Applicable       |



|     |     |                    |
|-----|-----|--------------------|
| PRO | 133 | Telecommunications |
| PRO | 997 | Not Applicable     |
| PRO | 998 | Multiple           |
| PRO | 999 | Other              |

# SGC

## Gradient/Slope

Percentage of slope. (i.e. The change in height divided by the horizontal distance over which the change takes place, times one hundred  $((h2-h1)/d)*100$ .)

|     |   |              |
|-----|---|--------------|
| SGC | 0 | Actual Value |
|-----|---|--------------|

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Percent | Short Integer | 0-100 | 1 %       |          |

# SSC

## Structure Shape Category

Geometric form, appearance, or configuration of the feature.

|     |    |                                |
|-----|----|--------------------------------|
| SSC | 0  | Unknown                        |
| SSC | 1  | Barrel, Ton                    |
| SSC | 2  | Blimp                          |
| SSC | 3  | Boat Hull (Float)              |
| SSC | 4  | Bullet                         |
| SSC | 5  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 6  | Conical /Peaked/NUN            |
| SSC | 7  | Cylindrical (Upright)/CAN      |
| SSC | 9  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 10 | Pillar, Spindle                |
| SSC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 12 | Pyramid                        |
| SSC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 14 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 15 | Solid/filled                   |
| SSC | 16 | Spar                           |
| SSC | 17 | Spherical (Hemispherical)      |
| SSC | 18 | Truss                          |
| SSC | 19 | With Radome                    |
| SSC | 20 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 21 | Artificial Mountain            |
| SSC | 22 | Crescent                       |
| SSC | 23 | Ferris Wheel                   |
| SSC | 24 | Enclosed                       |
| SSC | 25 | Roller coaster                 |
| SSC | 26 | Lateral                        |
| SSC | 27 | Mounds                         |
| SSC | 28 | Ripple                         |
| SSC | 29 | Star                           |
| SSC | 30 | Transverse                     |
| SSC | 31 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 33 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 34 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 35 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 36 | Windmotor                      |
| SSC | 38 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 40 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 46 | Open                           |

|     |     |                                   |
|-----|-----|-----------------------------------|
| SSC | 52  | 'A' Frame                         |
| SSC | 53  | 'H' Frame                         |
| SSC | 54  | 'I' Frame                         |
| SSC | 56  | 'Y' Frame                         |
| SSC | 57  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 58  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 59  | Telescoping Gasholder (Gasometer) |
| SSC | 60  | Mast                              |
| SSC | 61  | Tripod                            |
| SSC | 62  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 63  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 65  | Cylindrical with flat top         |
| SSC | 66  | Cylindrical with domed top        |
| SSC | 71  | Cylindrical/Peaked                |
| SSC | 73  | Superbuoy                         |
| SSC | 74  | 'T' Frame                         |
| SSC | 75  | Tetrahedron                       |
| SSC | 76  | Funnel                            |
| SSC | 77  | Arch                              |
| SSC | 78  | Multi-Arch                        |
| SSC | 79  | Round                             |
| SSC | 80  | Rectangular                       |
| SSC | 81  | Dragons Teeth                     |
| SSC | 82  | I-Beam                            |
| SSC | 83  | Square                            |
| SSC | 84  | Irregular                         |
| SSC | 85  | Diamond Shaped Buoy               |
| SSC | 86  | Oval                              |
| SSC | 87  | Dome                              |
| SSC | 107 | Tower                             |
| SSC | 108 | Scanner                           |
| SSC | 109 | Obelisk                           |
| SSC | 999 | Other                             |

## USE

### Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                                |
|-----|----|--------------------------------|
| USE | 0  | Unknown                        |
| USE | 1  | VALUE INTENTIONALLY LEFT BLANK |
| USE | 2  | VALUE INTENTIONALLY LEFT BLANK |
| USE | 3  | VALUE INTENTIONALLY LEFT BLANK |
| USE | 4  | National                       |
| USE | 5  | State                          |
| USE | 6  | Private                        |
| USE | 7  | Tribal                         |
| USE | 8  | Military                       |
| USE | 9  | VALUE INTENTIONALLY LEFT BLANK |
| USE | 10 | Other                          |
| USE | 11 | Motel/Hotel                    |
| USE | 12 | Apartment                      |
| USE | 13 | Open                           |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK |
| USE | 16 | City                           |
| USE | 17 | Advertising Billboard          |

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |
| USE | 85 | Initial Approach Fix               |
| USE | 86 | Final Approach Fix                 |
| USE | 87 | Visual Descent Point               |
| USE | 88 | Missed Approach Point              |
| USE | 89 | Radar                              |
| USE | 90 | Mileage Break Down                 |
| USE | 91 | NAVAID Changeover                  |
| USE | 92 | Altimeter Change                   |
| USE | 93 | Compulsory Reporting Points        |
| USE | 94 | Non-Compulsory Reporting Points    |

|     |     |   |
|-----|-----|---|
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

VEC      Vehicle Capacity  
Number of vehicles that a feature can accommodate.  
VEC    0      Actual Value

| Units    | Format        | Range    | Increment | Max Char |
|----------|---------------|----------|-----------|----------|
| Vehicles | Short Integer | 0±32,767 | 1 VEHICLE |          |

VRR Vertical Reference Category  
Relative location referenced to sounding datum, unless otherwise indicated.

|     |   |  |
|-----|---|--|
| VRR | 0 | Unknown                                      |
| VRR | 1 | Above Surface/Does not cover (At High Water) |
| VRR | 2 | Awash at Sounding Datum                      |
| VRR | 4 | Below Surface/Submerged                      |
| VRR | 8 | Covers and Uncovers                          |
| VRR | 9 | Not Applicable                               |

WID Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

WLE Water Level Effect  
Encodes the possible effects of the surrounding water.

|     |   |                                |
|-----|---|--------------------------------|
| WLE | 0 | Unknown                        |
| WLE | 1 | Partly submerged at high water |
| WLE | 2 | Always dry                     |
| WLE | 3 | Always under water/submerged   |
| WLE | 4 | Covers and uncovers            |
| WLE | 5 | Awash                          |
| WLE | 6 | Drying                         |

ZV2 Highest Z-Value  
Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

#### NAVAIDs Feature Class

ID

#### F-CODE/DESCRIPTION

|       |  |
|-------|--|
| BC010 | Beacon   |
| BC020 | Buoy   |
| BC030 | Leading Light(s)<br>Two or more lights forming a leading line of a course to be followed.) |
| BC035 | Lights in Line   |

- Lights marking area limits, cable alignment, alignments for anchoring, etc., not marking direction or course
- BC040 Light  
A specially constructed device which displays a luminous or lighted aid to navigation.
- BC050 Lighthouse  
A distinctive structure exhibiting lights designed to serve as an aid to navigation.
- BC055 Marker  
A colored, usually white, mark on a cliff, rock, wall, etc. which is a conspicuous landmark for marine navigation.
- BC060 Light Sector  
A sector defined by bearings from seaward within which a light shows a specified character or color, or is obscured.
- BC070 Light Vessel/Lightship  
A distinctively marked manned vessel anchored or moored at a defined point to serve as an aid to navigation.
- BC080 Perches/Stakes  
Small markers used to identify channels or to mark dangers such as rocks, shoals, etc.
- BC101 Fog Signal  
A warning signal transmitted by a vessel, or aid to navigation, during periods of low visibility. Also, the device producing such a signal.

|     |                                  |             |
|-----|----------------------------------|-------------|
| ACC | Accuracy Category                |             |
|     | Accuracy of geographic position. |             |
|     | ACC 0                            | Unknown     |
|     | ACC 1                            | Accurate    |
|     | ACC 2                            | Approximate |
|     | ACC 3                            | Doubtful    |
|     | ACC 5                            | Disputed    |
|     | ACC 6                            | Undisputed  |
|     | ACC 7                            | Precise     |
|     | ACC 8                            | Abrogated   |

|     |   |              |
|-----|---|--------------|
| AOO | Angle of Orientation  |              |
|     | The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded. |              |
|     | AOO 0   | Actual Value |

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

|     |                    |          |
|-----|--------------------|----------|
| ATN | Aids to Navigation |          |
|     | ATN 0              | Unknown  |
|     | ATN 1              | Marked   |
|     | ATN 2              | Unmarked |
|     | ATN 3              | Lit      |
|     | ATN 4              | Unlit    |
| ATN | 999                | Other    |

|     |                       |
|-----|-----------------------|
| BR2 | Broadcast Frequency 2 |
|-----|-----------------------|

The frequency on which a station broadcasts (second occurrence).

BR2 0 Actual Value

| Units | Format       | Range | Increment | Max Char |
|-------|--------------|-------|-----------|----------|
| Hertz | Long Integer |       | 1 HZ      |          |

BRF Broadcast Frequency  
Broadcast frequency of a communications device.

BRF 0 Actual Value

| Units | Format       | Range | Increment | Max Char |
|-------|--------------|-------|-----------|----------|
| Hertz | Long Integer |       | 1 HZ      |          |

BTC Beacon/Buoy Type Indicator

|        |   |
|--------|---|
| BTC 0  | Unknown   |
| BTC 1  | Cardinal  |
| BTC 2  | Float   |
| BTC 3  | Isolated Danger                                     |
| BTC 4  | Large Navigational Buoy (LANBY)                     |
| BTC 5  | Lateral   |
| BTC 6  | Light Float   |
| BTC 7  | Mooring   |
| BTC 8  | Mooring with Telegraph                              |
| BTC 9  | Mooring with Telephone                              |
| BTC 10 | Ocean Data Acquisition System (ODAS)                |
| BTC 11 | Outer, Landfall                                     |
| BTC 12 | Port (From Seaward or According to Dir. of Buoyage) |
| BTC 13 | Preferred Channel to Port                           |
| BTC 14 | Preferred Channel to Starboard                      |
| BTC 15 | Special Purpose                                     |
| BTC 16 | Starboard (From Seaward per Dir. of Buoyage)        |
| BTC 17 | Tanker  |
| BTC 18 | Safe Water  |
| BTC 19 | Anchorage   |
| BTC 20 | Fairway   |
| BTC 21 | Mid-Channel   |
| BTC 22 | Bifurcation   |
| BTC 23 | Junction  |
| BTC 24 | Wreck   |
| BTC 25 | Obstruction   |
| BTC 26 | Telegraph Cable                                     |
| BTC 27 | Warping   |
| BTC 28 | Quarantine  |
| BTC 29 | Practice Area                                       |
| BTC 30 | Explosive Anchorage                                 |
| BTC 31 | Aeronautical Anchorage                              |
| BTC 32 | Compass Adjustment                                  |
| BTC 33 | Fish Trap   |
| BTC 34 | Spoil Ground  |
| BTC 35 | Articulated Lights                                  |
| BTC 36 | Floating Beacon                                     |
| BTC 37 | Dan   |
| BTC 38 | Floodlit/Illuminated                                |
| BTC 39 | Trot  |

|     |     |  |
|-----|-----|--|
| BTC | 81  | Diving   |
| BTC | 82  | Information  |
| BTC | 83  | DND Buoy (Canadian Department of National Defence) |
| BTC | 85  | Caution  |
| BTC | 86  | Private  |
| BTC | 87  | Swim   |
| BTC | 88  | Control  |
| BTC | 89  | Keep-Out   |
| BTC | 90  | Daybeacon  |
| BTC | 91  | Lateral preferred channel to port mark             |
| BTC | 92  | Lateral preferred channel to starboard mark        |
| BTC | 93  | Lateral starboard-hand mark                        |
| BTC | 94  | Lateral port-hand mark                             |
| BTC | 95  | Cardinal West Mark                                 |
| BTC | 96  | Cardinal South Mark                                |
| BTC | 97  | Cardinal East Mark                                 |
| BTC | 98  | Cardinal North Mark                                |
| BTC | 99  | Installation                                       |
| BTC | 999 | Other  |

# CCC

## Color Code Category

|     |    |                                |
|-----|----|--------------------------------|
| CCC | 0  | Unknown                        |
| CCC | 1  | Black                          |
| CCC | 2  | Blue                           |
| CCC | 3  | Brown                          |
| CCC | 4  | Gray                           |
| CCC | 5  | Green                          |
| CCC | 7  | Chocolate                      |
| CCC | 8  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 9  | Orange                         |
| CCC | 10 | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 12 | Red                            |
| CCC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 14 | Violet                         |
| CCC | 15 | White                          |
| CCC | 16 | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 17 | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 18 | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 19 | Yellow                         |
| CCC | 20 | Red & White (RW)               |
| CCC | 21 | Red & Green (RG)               |
| CCC | 22 | Red & Black (RB)               |
| CCC | 23 | Red-Green-Red (RGR)            |
| CCC | 24 | Green & White (GW)             |
| CCC | 25 | Green & Red (GR)               |
| CCC | 26 | Green & Black (GB)             |
| CCC | 27 | Green-Red-Green (GRG)          |
| CCC | 28 | Green-Yellow-Black (GYB)       |
| CCC | 29 | Yellow & Black (YB)            |
| CCC | 30 | Yellow-Black-Yellow (YBY)      |
| CCC | 31 | Yellow & Red (YR)              |
| CCC | 32 | Yellow & Green (YG)            |
| CCC | 33 | Yellow-Red-White (YRW)         |



|     |     |                          |
|-----|-----|--------------------------|
| CCC | 34  | Black & Yellow (BY)      |
| CCC | 35  | Black-Yellow-Black (BYB) |
| CCC | 36  | Black-Red-Black (BRB)    |
| CCC | 37  | Black & White (BW)       |
| CCC | 38  | Black & Red (BR)         |
| CCC | 39  | Black & Green (BG)       |
| CCC | 40  | White & Red (WR)         |
| CCC | 41  | White & Orange (W Or)    |
| CCC | 42  | White & Green (WG)       |
| CCC | 43  | White & Black (WB)       |
| CCC | 44  | White & Yellow (WY)      |
| CCC | 45  | White-Red-Green (WRG)    |
| CCC | 46  | White-Green-White (WGW)  |
| CCC | 47  | Magenta                  |
| CCC | 48  | Amber                    |
| CCC | 49  | Buff                     |
| CCC | 50  | Nautical Purple          |
| CCC | 999 | Other                    |

#### CHA

#### Light Characteristic Category

|     |    |                                |
|-----|----|--------------------------------|
| CHA | 0  | Unknown                        |
| CHA | 1  | Alternating                    |
| CHA | 2  | Composite Group Flashing       |
| CHA | 3  | Composite Group Occulting      |
| CHA | 4  | Ultra Quick                    |
| CHA | 5  | Fixed                          |
| CHA | 6  | Fixed and Flashing             |
| CHA | 7  | Fixed and Group Flashing       |
| CHA | 8  | Flashing                       |
| CHA | 9  | Group Flashing                 |
| CHA | 10 | Group Occulting                |
| CHA | 11 | Interrupted Quick Flashing     |
| CHA | 12 | Interrupted Ultra Quick        |
| CHA | 13 | Interrupted Very Quick         |
| CHA | 14 | Isophase                       |
| CHA | 15 | Long-Flashing                  |
| CHA | 16 | Morse Code                     |
| CHA | 17 | Occulting                      |
| CHA | 19 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 20 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 21 | Lighted                        |
| CHA | 22 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 23 | Unlighted                      |
| CHA | 24 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 25 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 26 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 27 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 28 | Group Quick Flashing           |
| CHA | 29 | Group Very Quick               |
| CHA | 30 | Very Quick                     |
| CHA | 31 | Quick                          |
| CHA | 32 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 33 | Intensified                    |
| CHA | 34 | VALUE INTENTIONALLY LEFT BLANK |

|     |     |                                |
|-----|-----|--------------------------------|
| CHA | 35  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 36  | Directional                    |
| CHA | 37  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 38  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 39  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 40  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 41  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 42  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 43  | Directional Moiré              |
| CHA | 44  | Quick flashing                 |
| CHA | 45  | very quick flashing            |
| CHA | 46  | Flash / long flash             |
| CHA | 47  | Occulting / flash              |
| CHA | 48  | Fixed / long flash             |
| CHA | 49  | Occulting alternating          |
| CHA | 50  | Long flash alternating         |
| CHA | 51  | Flash alternating              |
| CHA | 52  | Group alternating              |
| CHA | 53  | 2 fixed (vertical)             |
| CHA | 54  | 2 fixed (horizontal)           |
| CHA | 55  | 3 fixed (vertical)             |
| CHA | 56  | 3 fixed (horizontal)           |
| CHA | 999 | Other                          |

|     |     |                                    |
|-----|-----|------------------------------------|
| CIC |     | Color Intensity Category           |
|     |     | Identifies the intensity of color. |
| CIC | 0   | Unknown                            |
| CIC | 1   | Dark                               |
| CIC | 2   | Light                              |
| CIC | 999 | Other                              |

|     |     |   |
|-----|-----|---|
| COC |     | Conspicuous Category  |
|     |     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |
| COC | 0   | Unknown   |
| COC | 1   | Conspicuous from sea  |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK  |
| COC | 3   | Radar Conspicuous from sea  |
| COC | 4   | Conspicuous from land   |
| COC | 5   | Conspicuous from air  |
| COC | 6   | Inconspicuous   |
| COC | 7   | Generally Conspicuous   |
| COC | 8   | Not visual conspicuous  |
| COC | 9   | Visual conspicuous  |
| COC | 10  | Not radar conspicuous   |
| COC | 999 | Other   |

|     |   |   |
|-----|---|---|
| COL |   | Character of Light  |
|     |   | Any identifier composed of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR]. |
| COL | 0 | Actual Value  |

|     | Units  | Format                  | Range    | Increment | Max Char |
|-----|--|-------------------------|----------|-----------|----------|
|     | Text String  | Lexical                 |          |           | 80       |
| DAG | <i>Type of Danger Category</i>   |                         |          |           |          |
| DMF | Density Measure (Feature Count)<br>Indicates the number of features of this type within an area. |                         |          |           |          |
| DMF | 0  | Actual Value            |          |           |          |
|     | Units  | Format                  | Range    | Increment | Max Char |
|     | Features   | Short Integer           | 0±32,767 | 1 FEATURE |          |
| EOL | Elevation of Light<br>The elevation of a light.  |                         |          |           |          |
| EOL | 0  | Actual Value            |          |           |          |
|     | Units  | Format                  | Range    | Increment | Max Char |
|     | Meters   | Short Integer           | 0±32,767 | 1 M       |          |
| EXS | Existence Category<br>The state or condition of the feature.                                     |                         |          |           |          |
| EXS | 0  | Unknown                 |          |           |          |
| EXS | 1  | Definite                |          |           |          |
| EXS | 2  | Doubtful                |          |           |          |
| EXS | 3  | Reported                |          |           |          |
| EXS | 5  | Under Construction      |          |           |          |
| EXS | 6  | Abandoned/Disused       |          |           |          |
| EXS | 7  | Destroyed               |          |           |          |
| EXS | 10   | Proposed                |          |           |          |
| EXS | 11   | Temporary               |          |           |          |
| EXS | 12   | Alternate               |          |           |          |
| EXS | 18   | Permanent               |          |           |          |
| EXS | 25   | Not Maintained          |          |           |          |
| EXS | 26   | Maintained              |          |           |          |
| EXS | 27   | Closed/Locked           |          |           |          |
| EXS | 28   | Operational             |          |           |          |
| EXS | 30   | Not Isolated            |          |           |          |
| EXS | 31   | Isolated                |          |           |          |
| EXS | 33   | Ruined                  |          |           |          |
| EXS | 35   | Other                   |          |           |          |
| EXS | 44   | Approximate/About       |          |           |          |
| EXS | 45   | Natural                 |          |           |          |
| EXS | 46   | Man-made                |          |           |          |
| EXS | 47   | Swept                   |          |           |          |
| EXS | 48   | Controlled              |          |           |          |
| EXS | 49   | Non-Controlled          |          |           |          |
| EXS | 50   | Non-Tidal               |          |           |          |
| EXS | 51   | Tidal/Tidal Fluctuation |          |           |          |
| EXS | 52   | Dissipating             |          |           |          |
| EXS | 53   | Incomplete              |          |           |          |
| EXS | 54   | Antique/Ancient         |          |           |          |
| EXS | 55   | Unexamined/Unsurveyed   |          |           |          |
| EXS | 56   | Unattended/Unwatched    |          |           |          |
| EXS | 59   | Not Usable              |          |           |          |

|     |     |                        |
|-----|-----|------------------------|
| EXS | 60  | Indefinite (Shoreline) |
| EXS | 61  | Definite Shoreline     |
| EXS | 62  | Partially Destroyed    |
| EXS | 65  | Inactive               |
| EXS | 998 | Not Applicable         |
| EXS | 999 | Other                  |

**HGT**      Height Above Surface Level  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT    0      Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**HLT**      Hydrographic Light Type  
The type of light used for marine navigation.  
HLT    0      Unknown  
HLT    1      Sector Light  
HLT    2      Other  
HLT    3      Moiré Effect Light  
HLT    4      Strip Light  
HLT    5      Occasional

**IAC**      IALA Aid Category  
Conformity of a navigational aid to the IALA system of navigational aids.  
IAC    0      Unknown  
IAC    1      Non-IALA Aid  
IAC    2      IALA Aid

**IBC**      Installation Buoy Classification  
IBC    0      Undefined  
IBC    1      Catenary anchor leg mooring (CALM)  
IBC    2      Single buoy mooring (SBM)

**LCN**      Light Characteristic Number  
Number of flashes/occultations in a group flashing/occulting light character.  
LCN    0      Actual Value

| Units   | Format        | Range    | Increment | Max Char |
|---------|---------------|----------|-----------|----------|
| Occults | Short Integer | 0±32,767 | 1 OCCULT  |          |

**LEN**      Length  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN    0      Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**LFA**      Light Function Aeronautical  
LFA    0      Unknown  
LFA    1      Airport Terminal Lights

|     |    |   |
|-----|----|---|
| LFA | 2  | Apron Flood   |
| LFA | 3  | Boundary Lights                                       |
| LFA | 4  | Runway Centerline Lighting                            |
| LFA | 5  | Runway End Identification Lighting(REIL)              |
| LFA | 6  | Runway Lights /Runway Edge Lights                     |
| LFA | 7  | Sequenced Strobe                                      |
| LFA | 8  | Taxiway Lighting                                      |
| LFA | 9  | Visual Approach Slope Indicator (VASI)                |
| LFA | 10 | Rotating Beacon                                       |
| LFA | 11 | Obstruction Lighting                                  |
| LFA | 12 | Threshold Light(s)                                    |
| LFA | 13 | Touchdown Zone Lighting                               |
| LFA | 14 | Other Airport Lighting                                |
| LFA | 15 | ALSF-1 (Approach Lighting System. with seq. flashing) |
| LFA | 16 | ALSF-II   |
| LFA | 17 | (SSALF)   |
| LFA | 18 | (SSALR)   |
| LFA | 19 | (MALSF)   |
| LFA | 20 | (MALSR)   |
| LFA | 21 | Landing Direction Indicator (LDIN)                    |
| LFA | 22 | RAIL (Runway Alignment Indicator Lights)              |
| LFA | 23 | ODALS (Omni Directional Approach Landing System).     |
| LFA | 24 | Other Approach Lighting                               |
| LFA | 25 | Precision Approach Path Indicator (PAPI)              |
| LFA | 26 | Strobe  |
| LFA | 27 | Runway Flood  |
| LFA | 28 | Variable Intensity Runway Lights                      |
| LFA | 29 | Portable Runway Lights                                |
| LFA | 30 | Flares  |
| LFA | 31 | Wind Indicator Lights                                 |
| LFA | 32 | Visual Approach Slope Indicator (3 bar)               |
| LFA | 33 | Optical Landing System                                |
| LFA | 51 | Aeronautical  |
| LFA | 52 | Auxiliary   |
| LFA | 53 | Beacon  |
| LFA | 54 | VALUE INTENTIONALLY LEFT BLANK                        |
| LFA | 55 | Fishing   |
| LFA | 56 | Fog Detector  |
| LFA | 57 | Harbor  |
| LFA | 58 | Horizontal  |
| LFA | 59 | Obstruction   |
| LFA | 60 | Occasional  |
| LFA | 61 | Private   |
| LFA | 62 | Range   |
| LFA | 63 | Seasonal  |
| LFA | 64 | Tidal   |
| LFA | 65 | Vertical  |
| LFA | 66 | Articulated   |
| LFA | 67 | Primary   |
| LFA | 68 | Secondary   |
| LFA | 69 | Major   |
| LFA | 70 | Minor   |
| LFA | 71 | Visual Approach Slope Indicator (2 bar)               |
| LFA | 72 | Identification Beacon                                 |

LFA 999 Other

LSA

Light Sector Angle

Angular limits of light visibility. Limits of sectors and arcs of visibility are arranged clockwise and shall be given from seaward toward the light.

LSA 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

LVN

Light Range, Nominal

The luminous range when the meteorological range is 10 sea miles.

LVN 0 Actual Value

| Units          | Format        | Range    | Increment | Max Char |
|----------------|---------------|----------|-----------|----------|
| Nautical Miles | Short Integer | 0±32,767 | 1 NM      |          |

MCA

Morse Code

The ASCII (ISO 646) letter that is being emitted by either the Navigation System Types (NST), Sound Signal (SST), Light characteristics (CHA), or electronic beacon type.

MCA 0 Actual Value

| Units       | Format     | Range | Increment | Max Char |
|-------------|------------|-------|-----------|----------|
| Text String | ASCII Text |       |           | 80       |

MCC

Material Composition Category

|        |                   |
|--------|-------------------|
| MCC 0  | Unknown           |
| MCC 4  | Ash               |
| MCC 5  | Asphalt           |
| MCC 6  | Basalt            |
| MCC 7  | Bedrock           |
| MCC 8  | Boulders          |
| MCC 9  | Brick             |
| MCC 10 | Calcareous        |
| MCC 11 | Cement            |
| MCC 12 | Chalk             |
| MCC 13 | Chemical          |
| MCC 14 | Cinders           |
| MCC 15 | Cirripedia        |
| MCC 16 | Clay              |
| MCC 17 | Coal              |
| MCC 18 | Cobble            |
| MCC 19 | Coke              |
| MCC 20 | Composition       |
| MCC 21 | Concrete          |
| MCC 22 | Conglomerate      |
| MCC 23 | Copper            |
| MCC 24 | Coral             |
| MCC 25 | Coral Head        |
| MCC 26 | Desalinated Water |
| MCC 27 | Diamonds          |
| MCC 28 | Diatoms           |
| MCC 29 | Dolomite          |

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |
| MCC | 66 | Mussels                        |
| MCC | 67 | Oil                            |
| MCC | 68 | Oil Blister                    |
| MCC | 69 | Ooze                           |
| MCC | 70 | Oysters                        |
| MCC | 71 | Paper                          |
| MCC | 72 | Part Metal                     |
| MCC | 73 | Pebbles                        |
| MCC | 74 | Plastic                        |
| MCC | 75 | Polyzoa                        |
| MCC | 76 | Porphyry                       |
| MCC | 77 | Prestressed Concrete           |
| MCC | 78 | Pteropods                      |
| MCC | 79 | Pumice                         |
| MCC | 80 | Quartz                         |
| MCC | 81 | Radiolaria                     |
| MCC | 82 | Radioactive Material           |
| MCC | 83 | Reinforced Concrete            |
| MCC | 84 | Rock/Rocky                     |
| MCC | 85 | Rubber                         |
| MCC | 86 | Rubble                         |
| MCC | 87 | Salt                           |

|     |     |                     |
|-----|-----|---------------------|
| MCC | 88  | Sand                |
| MCC | 89  | Sandstone           |
| MCC | 90  | Schist              |
| MCC | 91  | Spoils/Tailings     |
| MCC | 92  | Scoria              |
| MCC | 93  | Sea Tangle          |
| MCC | 94  | Seaweed             |
| MCC | 95  | Sewage              |
| MCC | 96  | Shells              |
| MCC | 98  | Shingle             |
| MCC | 99  | Silt                |
| MCC | 100 | Silver              |
| MCC | 101 | Slag                |
| MCC | 102 | Sludge              |
| MCC | 103 | Snow/Ice            |
| MCC | 104 | Soil                |
| MCC | 105 | Spicules            |
| MCC | 106 | Sponge              |
| MCC | 107 | Steel               |
| MCC | 108 | Stone               |
| MCC | 109 | Sugar               |
| MCC | 110 | Travertin           |
| MCC | 111 | Tufa                |
| MCC | 112 | Uranium             |
| MCC | 113 | Vegetation Products |
| MCC | 114 | Volcanic            |
| MCC | 115 | Volcanic Ash        |
| MCC | 116 | Water               |
| MCC | 117 | Wood                |
| MCC | 118 | Zinc                |
| MCC | 119 | Evaporites          |
| MCC | 999 | Other               |

#### MLR

##### Multiple Light Ranges

A set of two numbers for light ranges of visibility (at a light) expressed in nautical miles; the numbers are separated by a slash (/) if only two visibilities exist, or by a dash (-) separating the greatest and least visibilities if three or more exist.

MLR 0 Actual Value

| Units                     | Format     | Range | Increment | Max Char |
|---------------------------|------------|-------|-----------|----------|
| Text String<br>Characters | ASCII Text |       |           | 256      |

#### NAM

##### Name

Any Identifier or code.

NAM 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

#### NS2

##### Navigation Systems Type (2)

Type of equipment or system used in electronic navigation (secondary system).



|     |    |  |
|-----|----|--|
| NS2 | 0  | Unknown  |
| NS2 | 1  | Circular Radio Beacon  |
| NS2 | 2  | CONSOL   |
| NS2 | 3  | DECCA  |
| NS2 | 4  | Radio Direction Finding  |
| NS2 | 5  | Directional Radio Beacon   |
| NS2 | 6  | Distance Finding   |
| NS2 | 7  | Long Range Air Navigation System (LORAN)                         |
| NS2 | 8  | OMEGA  |
| NS2 | 9  | Other  |
| NS2 | 10 | Radar Responder Beacon (RACON)                                   |
| NS2 | 11 | Radar  |
| NS2 | 12 | Radio  |
| NS2 | 13 | Radio Telephone  |
| NS2 | 14 | VALUE INTENTIONALLY LEFT BLANK                                   |
| NS2 | 15 | TV   |
| NS2 | 16 | Microwave  |
| NS2 | 17 | Non-Directional Radio Beacon (NDB)                               |
| NS2 | 18 | NDB/Distance Measuring Equipment (NDB/DME)                       |
| NS2 | 19 | Radio Range (RNG)  |
| NS2 | 20 | VHF Omni Directional Radio Range (VOR)                           |
| NS2 | 21 | VHF Omni Directional (VOR /DME)                                  |
| NS2 | 22 | VHF Omni Directional (VORTAC)                                    |
| NS2 | 23 | Tactical Air Navigation Equipment (TACAN)                        |
| NS2 | 24 | Instrument Landing System (ILS)                                  |
| NS2 | 25 | Instrument Landing System/Distance Measuring Equipment (ILS/DME) |
| NS2 | 26 | Localizer (LOC)  |
| NS2 | 27 | Localizer/Distance Measuring Equipment (LOC/DME)                 |
| NS2 | 28 | Simplified Directional Facility (SDF)                            |
| NS2 | 29 | Landing Distance Available (LDA)                                 |
| NS2 | 30 | Microwave Landing System (MLS)                                   |
| NS2 | 31 | Fan Marker   |
| NS2 | 32 | Bone Marker  |
| NS2 | 33 | Radio Telegraph  |
| NS2 | 34 | Ground Controlled Approach (GCA)                                 |
| NS2 | 35 | Radar Antenna  |
| NS2 | 37 | Precision Approach Radar (PAR)                                   |
| NS2 | 38 | Aeronautical Radio   |
| NS2 | 39 | VALUE INTENTIONALLY LEFT BLANK                                   |
| NS2 | 40 | Radio Beacon   |
| NS2 | 41 | Rotating Loop Radio Beacon                                       |
| NS2 | 42 | Visual Flight Rules (VFR) Test Signal Maker                      |
| NS2 | 43 | VALUE INTENTIONALLY LEFT BLANK                                   |
| NS2 | 44 | Console Radio Beacon   |
| NS2 | 45 | Radar Station  |
| NS2 | 46 | Aeronautical Radio Range   |
| NS2 | 47 | Hifix  |
| NS2 | 48 | Hyperfix   |
| NS2 | 49 | Tricolor Panel   |
| NS2 | 50 | Radio station  |
| NS2 | 51 | Radiobeacon, Type Unknown  |
| NS2 | 52 | None   |
| NS2 | 53 | QTG Station (R)  |

|     |     |                                    |
|-----|-----|------------------------------------|
| NS2 | 54  | Ramark (Ramark)                    |
| NS2 | 55  | Radar reflector                    |
| NS2 | 56  | LO (Locator)                       |
| NS2 | 57  | LLZ (Localizer)                    |
| NS2 | 58  | DME (Distance Measuring Equipment) |
| NS2 | 999 | Other                              |

# NST

## Navigation Systems Types

Type of equipment or system used in electronic navigation (primary system).

|     |    |  |
|-----|----|--|
| NST | 0  | Unknown  |
| NST | 1  | Circular Radio Beacon  |
| NST | 2  | CONSOL   |
| NST | 3  | DECCA  |
| NST | 4  | Radio Direction Finding  |
| NST | 5  | Directional Radio Beacon   |
| NST | 6  | Distance Finding   |
| NST | 7  | Long Range Air Navigation System (LORAN)                         |
| NST | 8  | OMEGA  |
| NST | 9  | Other  |
| NST | 10 | Radar Responder Beacon (RACON)                                   |
| NST | 11 | Radar  |
| NST | 12 | Radio  |
| NST | 13 | Radio Telephone  |
| NST | 14 | VALUE INTENTIONALLY LEFT BLANK                                   |
| NST | 15 | TV   |
| NST | 16 | Microwave  |
| NST | 17 | Non-Directional Radio Beacon (NDB)                               |
| NST | 18 | NDB/Distance Measuring Equipment (NDB/DME)                       |
| NST | 19 | Radio Range (RNG)  |
| NST | 20 | VHF Omni Directional Radio Range (VOR)                           |
| NST | 21 | VHF Omni Directional (VOR /DME)                                  |
| NST | 22 | VHF Omni Directional (VORTAC)                                    |
| NST | 23 | Tactical Air Navigation Equipment (TACAN)                        |
| NST | 24 | Instrument Landing System (ILS)                                  |
| NST | 25 | Instrument Landing System/Distance Measuring Equipment (ILS/DME) |
| NST | 26 | Localizer (LOC)  |
| NST | 27 | Localizer/Distance Measuring Equipment (LOC/DME)                 |
| NST | 28 | Simplified Directional Facility (SDF)                            |
| NST | 29 | Landing Distance Available (LDA)                                 |
| NST | 30 | Microwave Landing System (MLS)                                   |
| NST | 31 | Fan Marker   |
| NST | 32 | Bone Marker  |
| NST | 33 | Radio Telegraph  |
| NST | 34 | Ground Controlled Approach (GCA)                                 |
| NST | 35 | Radar Antenna  |
| NST | 37 | Precision Approach Radar (PAR)                                   |
| NST | 38 | Aeronautical Radio   |
| NST | 39 | VALUE INTENTIONALLY LEFT BLANK                                   |
| NST | 40 | Radio Beacon   |
| NST | 41 | Rotating Loop Radio Beacon                                       |
| NST | 42 | Visual Flight Rules (VFR) Test Signal Maker                      |
| NST | 43 | VALUE INTENTIONALLY LEFT BLANK                                   |
| NST | 44 | Consol Radio Beacon  |

|     |     |                                    |
|-----|-----|------------------------------------|
| NST | 45  | Radar Station                      |
| NST | 46  | Aeronautical Radio Range           |
| NST | 47  | Hifix                              |
| NST | 48  | Hyperfix                           |
| NST | 49  | Tricolor Panel                     |
| NST | 50  | Radio station                      |
| NST | 51  | Radiobeacon, Type Unknown          |
| NST | 52  | None                               |
| NST | 53  | QTG Station (R)                    |
| NST | 54  | Ramark (Ramark)                    |
| NST | 55  | Radar reflector                    |
| NST | 56  | LO (Locator)                       |
| NST | 57  | LLZ (Localizer)                    |
| NST | 58  | DME (Distance Measuring Equipment) |
| NST | 999 | Other                              |

OR2 Navigation System Secondary  
The secondary range of the NAVAID beyond which the capture of the signal is not completely assured.

OR2 0 Actual Value

| Units          | Format        | Range    | Increment | Max Char |
|----------------|---------------|----------|-----------|----------|
| Nautical Miles | Short Integer | 0±32,767 | 1 NM      |          |

ORC Operating Range Category  
The range of the NAVAID beyond which the capture of the signal is not completely assured.

ORC 0 Actual Value

| Units          | Format        | Range    | Increment | Max Char |
|----------------|---------------|----------|-----------|----------|
| Nautical Miles | Short Integer | 0±32,767 | 1 NM      |          |

PAT Buoy Pattern Category

|     |     |                                     |
|-----|-----|-------------------------------------|
| PAT | 0   | Unknown                             |
| PAT | 1   | Checkered                           |
| PAT | 2   | Diagonal Bands                      |
| PAT | 3   | Single Color                        |
| PAT | 4   | Horizontal Bands                    |
| PAT | 5   | VALUE INTENTIONALLY LEFT BLANK      |
| PAT | 6   | Vertical Stripes                    |
| PAT | 98  | Squared                             |
| PAT | 99  | Horizontal bands from top to bottom |
| PAT | 999 | Other                               |

PER Period of Light  
The time occupied by an entire cycle of intervals of light and eclipse.

PER 0 Actual Value

| Units   | Format         | Range | Increment | Max Char |
|---------|----------------|-------|-----------|----------|
| Seconds | Floating Point |       |           |          |

REF Radar Reflector Attribute  
Indicates whether or not a radar reflector is attached to, or connected with, a feature.

REF 1 Radar Reflector Present  
REF 2 Radar Reflector Absent

RFQ Radar Transponder Beacon Frequency  
Specifies the specific frequency of a radar transponder beacon.  
RFQ 0 Actual Value

| Units     | Format        | Range    | Increment | Max Char |
|-----------|---------------|----------|-----------|----------|
| Kilohertz | Short Integer | 0±32,767 | 1 KHZ     |          |

RTB Radar Transponder Beacon Classification  
Tabulates types of radar transponder beacon.  
RTB 0 Undefined  
RTB 1 Ramark, radar beacon transmitting continuously  
RTB 2 Racon, radar transponder beacon with Morse identification

SMC Surface Material Characteristics  
Surface material composition excluding internal structural material.

|        |                   |
|--------|-------------------|
| SMC 0  | Unknown           |
| SMC 1  | Aircraft          |
| SMC 2  | Aluminum          |
| SMC 3  | Ammunition        |
| SMC 4  | Ash               |
| SMC 5  | Asphalt           |
| SMC 6  | Basalt            |
| SMC 7  | Bedrock           |
| SMC 8  | Boulders          |
| SMC 9  | Brick             |
| SMC 10 | Calcareous        |
| SMC 11 | Cement            |
| SMC 12 | Chalk             |
| SMC 13 | Chemical          |
| SMC 14 | Cinders           |
| SMC 15 | Cirripedia        |
| SMC 16 | Clay              |
| SMC 17 | Coal              |
| SMC 18 | Cobble            |
| SMC 19 | Coke              |
| SMC 20 | Compositio n      |
| SMC 21 | Concrete          |
| SMC 22 | Conglomerate      |
| SMC 23 | Copper            |
| SMC 24 | Coral             |
| SMC 25 | Coral Head        |
| SMC 26 | Desalinated Water |
| SMC 27 | Diamonds          |
| SMC 28 | Diatoms           |
| SMC 29 | Dolomite          |
| SMC 30 | Earthen           |
| SMC 31 | Electric          |
| SMC 32 | Eroded Lands      |
| SMC 33 | Explosives        |
| SMC 34 | Flynch            |
| SMC 35 | Food              |

|     |    |                                |
|-----|----|--------------------------------|
| SMC | 36 | Foraminifera                   |
| SMC | 37 | Fucus                          |
| SMC | 38 | Gas                            |
| SMC | 39 | Gasoline                       |
| SMC | 40 | Glass                          |
| SMC | 41 | Globigerina                    |
| SMC | 42 | Gold                           |
| SMC | 43 | Granite                        |
| SMC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 45 | Grass/Thatch                   |
| SMC | 46 | Gravel                         |
| SMC | 47 | Green Rocks                    |
| SMC | 48 | Ground                         |
| SMC | 49 | Ground (Shells)                |
| SMC | 50 | Heat                           |
| SMC | 51 | Iron                           |
| SMC | 52 | Lava                           |
| SMC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 54 | Lead                           |
| SMC | 55 | Loess                          |
| SMC | 56 | Lumber                         |
| SMC | 57 | Macadam                        |
| SMC | 58 | Madrepores                     |
| SMC | 59 | Manganese                      |
| SMC | 60 | Marble                         |
| SMC | 61 | Marl                           |
| SMC | 62 | Masonry (Brick/Stone)          |
| SMC | 63 | Mattes                         |
| SMC | 64 | Metal                          |
| SMC | 65 | Mud                            |
| SMC | 66 | Mussels                        |
| SMC | 67 | Oil                            |
| SMC | 68 | Oil Blister                    |
| SMC | 69 | Ooze                           |
| SMC | 70 | Oysters                        |
| SMC | 71 | Paper                          |
| SMC | 72 | Part Metal                     |
| SMC | 73 | Pebbles                        |
| SMC | 74 | Plastic                        |
| SMC | 75 | Polyzoa                        |
| SMC | 76 | Porphyry                       |
| SMC | 77 | Prestressed Concrete           |
| SMC | 78 | Pteropods                      |
| SMC | 79 | Pumice                         |
| SMC | 80 | Quartz                         |
| SMC | 81 | Radiolaria                     |
| SMC | 82 | Radioactive Material           |
| SMC | 83 | Reinforced Concrete            |
| SMC | 84 | Rock/Rocky                     |
| SMC | 85 | Rubber                         |
| SMC | 86 | Rubble                         |
| SMC | 87 | Salt                           |
| SMC | 88 | Sand                           |
| SMC | 89 | Sandstone                      |

|     |     |                                |
|-----|-----|--------------------------------|
| SMC | 90  | Schist                         |
| SMC | 91  | Spoils/Tailings                |
| SMC | 92  | Scoria                         |
| SMC | 93  | Sea Tangle                     |
| SMC | 94  | Seaweed                        |
| SMC | 95  | Sewage                         |
| SMC | 96  | Shells                         |
| SMC | 97  | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 98  | Shingle                        |
| SMC | 99  | Silt                           |
| SMC | 100 | Silver                         |
| SMC | 101 | Slag                           |
| SMC | 102 | Sludge                         |
| SMC | 103 | Snow/Ice                       |
| SMC | 104 | Soil                           |
| SMC | 105 | Spicules                       |
| SMC | 106 | Sponge                         |
| SMC | 107 | Steel                          |
| SMC | 108 | Stone                          |
| SMC | 109 | Sugar                          |
| SMC | 110 | Travertin                      |
| SMC | 111 | Tufa                           |
| SMC | 112 | Uranium                        |
| SMC | 113 | Vegetation Products            |
| SMC | 114 | Volcanic                       |
| SMC | 115 | Volcanic Ash                   |
| SMC | 116 | Water                          |
| SMC | 117 | Wood                           |
| SMC | 118 | Zinc                           |
| SMC | 119 | Distorted surface              |
| SMC | 120 | Sand and gravel                |
| SMC | 121 | Rip-Rap                        |
| SMC | 198 | Kelp                           |
| SMC | 199 | Sandwaves                      |
| SMC | 999 | Other                          |

#### SSC

#### Structure Shape Category

Geometric form, appearance, or configuration of the feature.

|     |    |                                |
|-----|----|--------------------------------|
| SSC | 0  | Unknown                        |
| SSC | 1  | Barrel, Ton                    |
| SSC | 2  | Blimp                          |
| SSC | 3  | Boat Hull (Float)              |
| SSC | 4  | Bullet                         |
| SSC | 5  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 6  | Conical /Peaked/NUN            |
| SSC | 7  | Cylindrical (Upright)/CAN      |
| SSC | 9  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 10 | Pillar, Spindle                |
| SSC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 12 | Pyramid                        |
| SSC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 14 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 15 | Solid/filled                   |
| SSC | 16 | Spar                           |

|     |     |                                   |
|-----|-----|-----------------------------------|
| SSC | 17  | Spherical (Hemispherical)         |
| SSC | 18  | Truss                             |
| SSC | 19  | With Radome                       |
| SSC | 20  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 21  | Artificial Mountain               |
| SSC | 22  | Crescent                          |
| SSC | 23  | Ferris Wheel                      |
| SSC | 24  | Enclosed                          |
| SSC | 25  | Roller coaster                    |
| SSC | 26  | Lateral                           |
| SSC | 27  | Mounds                            |
| SSC | 28  | Ripple                            |
| SSC | 29  | Star                              |
| SSC | 30  | Transverse                        |
| SSC | 31  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 33  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 34  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 35  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 36  | Windmotor                         |
| SSC | 38  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 40  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 46  | Open                              |
| SSC | 52  | 'A' Frame                         |
| SSC | 53  | 'H' Frame                         |
| SSC | 54  | 'T' Frame                         |
| SSC | 56  | 'Y' Frame                         |
| SSC | 57  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 58  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 59  | Telescoping Gasholder (Gasometer) |
| SSC | 60  | Mast                              |
| SSC | 61  | Tripod                            |
| SSC | 62  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 63  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 65  | Cylindrical with flat top         |
| SSC | 66  | Cylindrical with domed top        |
| SSC | 71  | Cylindrical/Peaked                |
| SSC | 73  | Superbuoy                         |
| SSC | 74  | 'T' Frame                         |
| SSC | 75  | Tetrahedron                       |
| SSC | 76  | Funnel                            |
| SSC | 77  | Arch                              |
| SSC | 78  | Multi-Arch                        |
| SSC | 79  | Round                             |
| SSC | 80  | Rectangular                       |
| SSC | 81  | Dragons Teeth                     |
| SSC | 82  | I-Beam                            |
| SSC | 83  | Square                            |
| SSC | 84  | Irregular                         |
| SSC | 85  | Diamond Shaped Buoy               |
| SSC | 86  | Oval                              |
| SSC | 87  | Dome                              |
| SSC | 107 | Tower                             |
| SSC | 108 | Scanner                           |
| SSC | 109 | Obelisk                           |

|     |                         |   |
|-----|-------------------------|---|
| SSC | 999                     | Other   |
| SOH | Severity of Hazard      |   |
| SOH | 0                       | Unknown   |
| SOH | 1                       | Dangerous   |
| SOH | 2                       | Non-Dangerous   |
| SOH | 3                       | Obstruction   |
| SOH | 99                      | Non-Dangerous to surface navigation, but avoid anchoring/trawling |
| SOH | 999                     | Other   |
| SST | Sound Signal Type       |   |
| SST | 0                       | Unknown   |
| SST | 1                       | Bell  |
| SST | 2                       | Diaphone  |
| SST | 3                       | Explosive Fog Signal  |
| SST | 4                       | Gong  |
| SST | 5                       | Gun   |
| SST | 6                       | Horn  |
| SST | 7                       | Nautophone  |
| SST | 8                       | Radio Fog Signal  |
| SST | 9                       | Siren   |
| SST | 10                      | Submarine Fog Bell  |
| SST | 11                      | Submarine Oscillator  |
| SST | 12                      | Submarine Sound Signal (Connected to Shore)                       |
| SST | 13                      | Submarine Sound Signal (Not Connected to Shore)                   |
| SST | 14                      | Whistle   |
| SST | 15                      | Reed  |
| SST | 16                      | None  |
| SST | 98                      | Tyfon   |
| SST | 999                     | Other   |
| SHP | Shape of Beacon         |   |
| SHP | 0                       | Undefined   |
| SHP | 1                       | Stake / pole  |
| SHP | 2                       | Withy   |
| SHP | 3                       | Beacon tower  |
| SHP | 4                       | Lattice beacon  |
| TMC | Top Mark Characteristic |   |
| TMC | 0                       | Unknown   |
| TMC | 1                       | East Mark (2 cones - base together)                               |
| TMC | 2                       | Isolated Danger (2 balls)   |
| TMC | 3                       | North Mark (2 cones - pointing up)                                |
| TMC | 4                       | Port Hand (can or cylinder)                                       |
| TMC | 5                       | Safe Water (1 ball)   |
| TMC | 6                       | Special (X)   |
| TMC | 7                       | Starboard Hand (1 cone - pointing up)                             |
| TMC | 8                       | South Mark (2 cones - pointing down)                              |
| TMC | 9                       | West Mark (2 cones - points together)                             |
| TMC | 10                      | Nun   |
| TMC | 11                      | VALUE INTENTIONALLY LEFT BLANK                                    |
| TMC | 12                      | Ball  |
| TMC | 13                      | Can   |



|     |     |                                  |
|-----|-----|----------------------------------|
| TMC | 14  | St. Andrew's Cross               |
| TMC | 15  | Ball over Cone                   |
| TMC | 16  | Cone over Ball                   |
| TMC | 17  | Broom point up                   |
| TMC | 18  | Perch                            |
| TMC | 19  | Diamond                          |
| TMC | 20  | Broom point down                 |
| TMC | 21  | Cone (Point Upwards)             |
| TMC | 22  | Cone (Point Downwards)           |
| TMC | 23  | Upright Cross                    |
| TMC | 24  | Optical ReflectorWW              |
| TMC | 25  | Can (Open)                       |
| TMC | 26  | Can (Filled)                     |
| TMC | 27  | Ball (Open)                      |
| TMC | 28  | Ball (Filled)                    |
| TMC | 29  | Can Over Ball (Open)             |
| TMC | 30  | Cross Over Ball (Filled)         |
| TMC | 31  | Diamond Over Ball (Filled)       |
| TMC | 32  | Double Cone, Points Apart (Open) |
| TMC | 33  | None                             |
| TMC | 999 | Other                            |

TXT      Text Attribute  
Narrative or other description.  
TXT    0      Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

WID      Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID    0      Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

ZV2      Highest Z-Value  
Elevation above a given datum to the highest portion of the feature.

ZV2    0      Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

#### NAVAID Regions Feature Class

ID

F-CODE/DESCRIPTION

BC031    Navigation Line

A line generated by the straight line connection between two navigational aids, and which extends towards the area of navigational interest.

BC032 Radar Line

Mid-channel lines corresponding to the lines in harbor radar displays.

BC033 Radar Range

Indicates the coverage of a sea area by a radar surveillance station. Inside this area a vessel may request shore based radar assistance, particularly in poor visibility.

BC100 Leading Line

A track which passes through one or more, usually two, clearly defined objects, along which a vessel can safely travel.

ARA

Area Coverage Attribute

The absolute area within the delineation of the feature.

ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

BRG

Bearing of Object

The bearing of an object from an observer (on any point along the line) towards the object or feature, expressed in degrees and tenths (e.g. 3.0 DEG).

BRG 0 Actual Value

| Units   | Format         | Range     | Increment | Max Char |
|---------|----------------|-----------|-----------|----------|
| Degrees | Floating Point | 0.0-359.9 | 0.1 DEG   |          |

DRP

Description of Reference Point

Description of the feature(s) which form a Leading Line or Clearing Line.

DRP 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

LAF

Line Associated Features

|     |   |  |
|-----|---|--|
| LAF | 1 | One Object (Other Than a Directional Light)            |
| LAF | 2 | Directional Light                                      |
| LAF | 3 | Two or More Lights                                     |
| LAF | 4 | Two or More Beacons                                    |
| LAF | 5 | Two or More Objects (Other than two Lights or Beacons) |
| LAF | 6 | Measured Distance Markers                              |
| LAF | 7 | Directional Radiobeacon                                |
| LAF | 8 | Moire' Effect Light                                    |

LNC

Line Characteristic

|     |   |                               |
|-----|---|-------------------------------|
| LNC | 0 | Unknown                       |
| LNC | 1 | Rhumb or Loxodrome Line       |
| LNC | 2 | Geodesic or Great Circle Line |

## Natural Dangers/Hazards Feature Class

### ID

#### F-CODE/DESCRIPTION

- BD010 Breakers  
Waves which break over off-lying shoals or near the shore.
- BD030 Discolored Water  
An area of sea water having a color distinctly different from the surrounding water.
- BD040 Eddies  
Circular movements of water running contrary to the main current.
- BD060 Kelp/Seaweed  
A large Seaweed.
- BD080 Overfalls/Tide Rips  
Short, breaking waves occurring when a current passes over a shoal or other submarine obstruction or meets a contrary current or wind. Tide rips occur when one or more of the currents are tidal.
- BD119 Ledge  
A narrow, flat surface or shelf, especially one that projects, as from a wall of rock.
- BD120 Reef  
A rocky or coral elevation at or near enough to the surface of the sea to be a danger to surface navigation
- BD121 Pingo  
A cone or dome shaped mound or hill of peat or soil, usually with a core of ice. It is found in tundra regions and is produced by the pressure of water or ice accumulating underground and pushing upward
- BD130 Rock  
An isolated rocky formation or a single large stone above or below the water surface.
- BD140 Snags/Stumps  
A stem or a trunk of a tree below the surface of water.

### ACC

Accuracy Category  
Accuracy of geographic position.

- |     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

### AOO

Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

- |     |   |              |
|-----|---|--------------|
| AOO | 0 | Actual Value |
|-----|---|--------------|

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

ARA Area Coverage Attribute  
The absolute area within the delineation of the feature.  
ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

ATN Aids to Navigation  
ATN 0 Unknown  
ATN 1 Marked  
ATN 2 Unmarked  
ATN 3 Lit  
ATN 4 Unlit  
ATN 999 Other

C80 Rate of Current  
Rate of current flow at high water.  
C80 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

C81 Rate of Current 1  
Rate of current flow 1 hour after high water.  
C81 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

C82 Rate of Current 2  
Rate of current flow 2 hours after high water.  
C82 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

C83 Rate of Current 3  
Rate of current flow 3 hours after high water.  
C83 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

C84 Rate of Current 4  
Rate of current flow 4 hours after high water.  
C84 0 Actual Value

| Units | Format         | Range | Increment | Max Char |
|-------|----------------|-------|-----------|----------|
| Knots | Floating Point |       | 0.1 KNOT  |          |

|     |  |                |              |                                  |
|-----|--|----------------|--------------|----------------------------------|
| C85 | Rate of Current 5<br>Rate of current flow 5 hours after high water.<br>C85    0    Actual Value          |                |              |                                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Knots  | Floating Point |              | 0.1 KNOT                         |
| C86 | Rate of Current 6<br>Rate of current flow 6 hours after high water.<br>C86    0    Actual Value          |                |              |                                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Knots  | Floating Point |              | 0.1 KNOT                         |
| C87 | Rate of Current 7<br>Rate of current flow 7 hours after high water.<br>C87    0    Actual Value          |                |              |                                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Knots  | Floating Point |              | 0.1 KNOT                         |
| C88 | Rate of Current 8<br>Rate of current flow 8 hours after high water.<br>C88    0    Actual Value          |                |              |                                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Knots  | Floating Point |              | 0.1 KNOT                         |
| C89 | Rate of Current 9<br>Rate of current flow 9 hours after high water.<br>C89    0    Actual Value          |                |              |                                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Knots  | Floating Point |              | 0.1 KNOT                         |
| C90 | Rate of Current 10<br>Rate of current flow 10 hours after high water.<br>C90    0    Actual Value        |                |              |                                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Knots  | Floating Point |              | 0.1 KNOT                         |
| C91 | Rate of Current 11<br>Rate of current flow 11 hours after high water.<br>C91    0    Actual Value        |                |              |                                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     | Knots  | Floating Point |              | 0.1 KNOT                         |
| CCC | Color Code Category<br>CCC    0    Unknown<br>CCC    1    Black<br>CCC    2    Blue<br>CCC    3    Brown |                |              |                                  |

|     |     |                                |
|-----|-----|--------------------------------|
| CCC | 4   | Gray                           |
| CCC | 5   | Green                          |
| CCC | 7   | Chocolate                      |
| CCC | 8   | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 9   | Orange                         |
| CCC | 10  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 11  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 12  | Red                            |
| CCC | 13  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 14  | Violet                         |
| CCC | 15  | White                          |
| CCC | 16  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 17  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 18  | VALUE INTENTIONALLY LEFT BLANK |
| CCC | 19  | Yellow                         |
| CCC | 20  | Red & White (RW)               |
| CCC | 21  | Red & Green (RG)               |
| CCC | 22  | Red & Black (RB)               |
| CCC | 23  | Red-Green-Red (RGR)            |
| CCC | 24  | Green & White (GW)             |
| CCC | 25  | Green & Red (GR)               |
| CCC | 26  | Green & Black (GB)             |
| CCC | 27  | Green-Red-Green (GRG)          |
| CCC | 28  | Green-Yellow-Black (GYB)       |
| CCC | 29  | Yellow & Black (YB)            |
| CCC | 30  | Yellow-Black-Yellow (YBY)      |
| CCC | 31  | Yellow & Red (YR)              |
| CCC | 32  | Yellow & Green (YG)            |
| CCC | 33  | Yellow-Red-White (YRW)         |
| CCC | 34  | Black & Yellow (BY)            |
| CCC | 35  | Black-Yellow-Black (BYB)       |
| CCC | 36  | Black-Red-Black (BRB)          |
| CCC | 37  | Black & White (BW)             |
| CCC | 38  | Black & Red (BR)               |
| CCC | 39  | Black & Green (BG)             |
| CCC | 40  | White & Red (WR)               |
| CCC | 41  | White & Orange (W Or)          |
| CCC | 42  | White & Green (WG)             |
| CCC | 43  | White & Black (WB)             |
| CCC | 44  | White & Yellow (WY)            |
| CCC | 45  | White-Red-Green (WRG)          |
| CCC | 46  | White-Green-White (WGW)        |
| CCC | 47  | Magenta                        |
| CCC | 48  | Amber                          |
| CCC | 49  | Buff                           |
| CCC | 50  | Nautical Purple                |
| CCC | 999 | Other                          |

#### CIC

Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

|     |   |                |                                |           |          |
|-----|---|----------------|--------------------------------|-----------|----------|
| COC | Conspicuous Category  |                |                                |           |          |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                |                                |           |          |
|     | COC   | 0              | Unknown                        |           |          |
|     | COC   | 1              | Conspicuous from sea           |           |          |
|     | COC   | 2              | VALUE INTENTIONALLY LEFT BLANK |           |          |
|     | COC   | 3              | Radar Conspicuous from sea     |           |          |
|     | COC   | 4              | Conspicuous from land          |           |          |
|     | COC   | 5              | Conspicuous from air           |           |          |
|     | COC   | 6              | Inconspicuous                  |           |          |
|     | COC   | 7              | Generally Conspicuous          |           |          |
|     | COC   | 8              | Not visual conspicuous         |           |          |
|     | COC   | 9              | Visual conspicuous             |           |          |
|     | COC   | 10             | Not radar conspicuous          |           |          |
|     | COC   | 999            | Other                          |           |          |
| COD | Certainty of Delineation  |                |                                |           |          |
|     | COD   | 0              | Unknown                        |           |          |
|     | COD   | 1              | Limits and Information Known   |           |          |
|     | COD   | 2              | Limits and Information Unknown |           |          |
| CRN | Current Rate Minimum  |                |                                |           |          |
|     | Minimum speed of current.   |                |                                |           |          |
|     | CRN   | 0              | Actual Value                   |           |          |
|     | Units   | Format         | Range                          | Increment | Max Char |
|     | Knots   | Floating Point |                                | 0.1 KNOT  |          |
| CRS | Current Rate (Speed)  |                |                                |           |          |
|     | Current speed in knots.   |                |                                |           |          |
|     | CRS   | 0              | Actual Value                   |           |          |
|     | Units   | Format         | Range                          | Increment | Max Char |
|     | Knots   | Floating Point |                                | 0.1 KNOT  |          |
| CRX | Current Rate Maximum  |                |                                |           |          |
|     | Maximum speed of current.   |                |                                |           |          |
|     | CRX   | 0              | Actual Value                   |           |          |
|     | Units   | Format         | Range                          | Increment | Max Char |
|     | Knots   | Floating Point |                                | 0.1 KNOT  |          |
| D80 | Direction of Current  |                |                                |           |          |
|     | Direction of current flow at high water.  |                |                                |           |          |
|     | D80   | 0              | Actual Value                   |           |          |
|     | Units   | Format         | Range                          | Increment | Max Char |
|     | Degrees   | Short Integer  | 0-359                          | 1 DEG     |          |
| D81 | Direction of Current 1  |                |                                |           |          |
|     | Direction of current flow 1 hour after high water.  |                |                                |           |          |
|     | D81   | 0              | Actual Value                   |           |          |

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D82      Direction of Current 2  
Direction of current flow 2 hours after high water.  
D82    0      Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D83      Direction of Current 3  
Direction of current flow 3 hours after high water.  
D83    0      Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D84      Direction of Current 4  
Direction of current flow 4 hours after high water.  
D84    0      Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D85      Direction of Current 5  
Direction of current flow 5 hours after high water.  
D85    0      Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D86      Direction of Current 6  
Direction of current flow 6 hours after high water.  
D86    0      Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D87      Direction of Current 7  
Direction of current flow 7 hours after high water.  
D87    0      Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D88      Direction of Current 8  
Direction of current flow 8 hours after high water.  
D88    0      Actual Value

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Degrees      | Short Integer | 0-359        | 1 DEG            |                 |

D89      Direction of Current 9



Direction of current flow 9 hours after high water.

D89 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

D90 Direction of Current 10

Direction of current flow 10 hours after high water.

D90 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

D91 Direction of Current 11

Direction of current flow 11 hours after high water.

D91 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |          |

DAN Description of Aids to Navigation

Textual description of aids to navigation marking a feature, e.g. Marked by buoys.

DAN 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

DAT Date

EXS Existence Category

The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |
| EXS | 12 | Alternate          |
| EXS | 18 | Permanent          |
| EXS | 25 | Not Maintained     |
| EXS | 26 | Maintained         |
| EXS | 27 | Closed/Locked      |
| EXS | 28 | Operational        |
| EXS | 30 | Not Isolated       |
| EXS | 31 | Isolated           |
| EXS | 33 | Ruined             |
| EXS | 35 | Other              |
| EXS | 44 | Approximate/About  |
| EXS | 45 | Natural            |
| EXS | 46 | Man-made           |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

HDH Hydrographic Drying Height

HDI Hydrographic Depth/Height Information

HDP Hydrographic Depth

The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

HDP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

HGT Height Above Surface Level

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

LEN Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

LOC Location Category

Status of feature relative to surrounding area or water.

|     |   |   |
|-----|---|---|
| LOC | 0 | Unknown                                     |
| LOC | 1 | Above Surface/Does not Cover (Height Known) |
| LOC | 2 | Awash at Chart Datum                        |
| LOC | 3 | Dries/Covers (Height Unknown)               |

|     |     |   |
|-----|-----|---|
| LOC | 4   | Below Surface /Submerged/Underground              |
| LOC | 5   | Covered < 20 Meters                               |
| LOC | 6   | Covered ≥ 20 Meters but < 30 Meters               |
| LOC | 7   | Covered ≥ 30 Meters                               |
| LOC | 8   | On Ground Surface                                 |
| LOC | 9   | Depth Known                                       |
| LOC | 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11  | Depth Unknown But Safe to Depth Shown             |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13  | Hull Showing                                      |
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

MCC      Material Composition Category

|     |    |            |
|-----|----|------------|
| MCC | 0  | Unknown    |
| MCC | 4  | Ash        |
| MCC | 5  | Asphalt    |
| MCC | 6  | Basalt     |
| MCC | 7  | Bedrock    |
| MCC | 8  | Boulders   |
| MCC | 9  | Brick      |
| MCC | 10 | Calcareous |
| MCC | 11 | Cement     |
| MCC | 12 | Chalk      |
| MCC | 13 | Chemical   |
| MCC | 14 | Cinders    |
| MCC | 15 | Cirripedia |
| MCC | 16 | Clay       |
| MCC | 17 | Coal       |
| MCC | 18 | Cobble     |
| MCC | 19 | Coke       |

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |
| MCC | 66 | Mussels                        |
| MCC | 67 | Oil                            |
| MCC | 68 | Oil Blister                    |
| MCC | 69 | Ooze                           |
| MCC | 70 | Oysters                        |
| MCC | 71 | Paper                          |
| MCC | 72 | Part Metal                     |
| MCC | 73 | Pebbles                        |
| MCC | 74 | Plastic                        |
| MCC | 75 | Polyzoa                        |
| MCC | 76 | Porphyry                       |
| MCC | 77 | Prestressed Concrete           |

|     |     |                      |
|-----|-----|----------------------|
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |
| MCC | 999 | Other                |

NAM      Name  
Any Identifier or code.  
NAM    0      Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

SD1      Stem Diameter Size Range (1)  
SD1    0      Unknown  
SD1    1      > 0 and ≤ 2.00

|     |    |                      |
|-----|----|----------------------|
| SD1 | 2  | > 2.00 and ≤ 4.00    |
| SD1 | 3  | > 4.00 and ≤ 6.00    |
| SD1 | 4  | > 6.00 and ≤ 8.00    |
| SD1 | 5  | > 8.00 and ≤ 10.00   |
| SD1 | 6  | > 10.00 and ≤ 12.00  |
| SD1 | 7  | > 12.00 and ≤ 15.00  |
| SD1 | 8  | > 15.00 and ≤ 20.00  |
| SD1 | 9  | > 20.00 and ≤ 25.00  |
| SD1 | 10 | > 25.00 and ≤ 50.00  |
| SD1 | 11 | > 50.00 and ≤ 100.00 |
| SD1 | 12 | > 100.00             |
| SD1 | 13 | NA                   |

**SD2**      Stem Diameter Size Range (2)

|     |   |                      |
|-----|---|----------------------|
| SD2 | 0 | Unknown              |
| SD2 | 1 | > 0 and ≤ 10.00      |
| SD2 | 2 | > 10.00 and ≤ 25.00  |
| SD2 | 3 | > 25.00 and ≤ 50.00  |
| SD2 | 4 | > 50.00 and ≤ 100.00 |
| SD2 | 5 | > 100.00             |
| SD2 | 6 | NA                   |

**SOH**      Severity of Hazard

|     |     |   |
|-----|-----|---|
| SOH | 0   | Unknown   |
| SOH | 1   | Dangerous   |
| SOH | 2   | Non-Dangerous   |
| SOH | 3   | Obstruction   |
| SOH | 99  | Non-Dangerous to surface navigation, but avoid anchoring/trawling |
| SOH | 999 | Other   |

**TXT**      Text Attribute

Narrative or other description.

|     |   |              |
|-----|---|--------------|
| TXT | 0 | Actual Value |
|-----|---|--------------|

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

**VAL**      Value

**VRR**      Vertical Reference Category

Relative location referenced to sounding datum, unless otherwise indicated.

|     |   |  |
|-----|---|--|
| VRR | 0 | Unknown                                      |
| VRR | 1 | Above Surface/Does not cover (At High Water) |
| VRR | 2 | Awash at Sounding Datum                      |
| VRR | 4 | Below Surface/Submerged                      |
| VRR | 8 | Covers and Uncovers                          |
| VRR | 9 | Not Applicable                               |

**WID**      Width

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For

a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

ZV2 Highest Z-Value  
Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

VAL Value

### Manmade Dangers/Hazards Feature Class

ID

F-CODE/DESCRIPTION

- BD001 Mine  
An explosive device used in naval warfare located on or below the sea
- BD002 *Mine-Like Objects*
- BD020 Crib  
A framework structure submerged or above water used to support pipelines, sewer lines, or outfalls.
- BD071 Log Boom/Booming Ground  
A line of connected floating, timbers as across a river or enclosing a water area to keep logs ready for the sawmill from floating away; also, the enclosed area.
- BD072 Pontoon  
A broad, flat-bottomed floating structure without sheer, rectangular in shape, resembling a barge.
- BD073 Oil Barrier  
A construction to dam oil flow on water.
- BD074 Chain/Wire  
A physical connection between two independent objects, e.g. between: anchor and mooring buoy; anchor and offshore platform; hulk and bollard on land.
- BD079 Fishing Facility  
A tool in shallow water for fishing purposes which can be an obstruction to ships in general.
- BD100 Pile/Piling/Post  
A long heavy timber or section of steel, concrete, etc., forced into the earth to serve as a support, as for a pier.
- BD110 Platform  
A flat surface raised above the sea, as a working stage for conducting offshore operations.
- BD111 Offshore Platform Site (cleared)  
A structure placed in the sea and used for production loading and discharge or observation/research facilities.

- BD112 Production Installation  
An installation for the exploitation of natural resources
- BD180 Wreck  
The ruined remains of a vessel.
- BD181 Hulk  
An unrigged hull condemned as unfit for the risks of the sea and used as a floating depot in a harbor or roadstead.
- BD182 Spoil/Disposal Area

- ACC Accuracy Category  
Accuracy of geographic position.
- |     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

- AFA Available Facilities  
Facilities available at or in the near vicinity.
- |     |     |                  |
|-----|-----|------------------|
| AFA | 0   | Unknown          |
| AFA | 1   | Visitors Berth   |
| AFA | 2   | Visitors Mooring |
| AFA | 3   | Sailmaker        |
| AFA | 4   | Chandler         |
| AFA | 5   | Provisions       |
| AFA | 6   | Physician/Doctor |
| AFA | 7   | Pharmacy/Chemist |
| AFA | 8   | Drinking Water   |
| AFA | 9   | Fuel Station     |
| AFA | 10  | Electricity      |
| AFA | 11  | Bottle Gas/LPG   |
| AFA | 12  | Showers          |
| AFA | 13  | Laundrette       |
| AFA | 14  | Toilets          |
| AFA | 15  | Post Box         |
| AFA | 16  | Public Telephone |
| AFA | 17  | Refuse Bin       |
| AFA | 18  | Water Police     |
| AFA | 19  | Helipad          |
| AFA | 20  | Ticket Sales     |
| AFA | 21  | No Ticket Sales  |
| AFA | 22  | Yatch Club       |
| AFA | 23  | Boat Hoist       |
| AFA | 24  | Boat Yard        |
| AFA | 25  | Public Inn       |
| AFA | 26  | Restaurant       |
| AFA | 999 | Other            |

- AOO Angle of Orientation



The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

ATN

Aids to Navigation

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

CAP

Capacity

CHA

Light Characteristic Category

The sequence, grouping, and distinctive character of light.

|     |    |                                |
|-----|----|--------------------------------|
| CHA | 0  | Unknown                        |
| CHA | 1  | Alternating                    |
| CHA | 2  | Composite Group Flashing       |
| CHA | 3  | Composite Group Occulting      |
| CHA | 4  | Ultra Quick                    |
| CHA | 5  | Fixed                          |
| CHA | 6  | Fixed and Flashing             |
| CHA | 7  | Fixed and Group Flashing       |
| CHA | 8  | Flashing                       |
| CHA | 9  | Group Flashing                 |
| CHA | 10 | Group Occulting                |
| CHA | 11 | Interrupted Quick Flashing     |
| CHA | 12 | Interrupted Ultra Quick        |
| CHA | 13 | Interrupted Very Quick         |
| CHA | 14 | Isophase                       |
| CHA | 15 | Long-Flashing                  |
| CHA | 16 | Morse Code                     |
| CHA | 17 | Occulting                      |
| CHA | 19 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 20 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 21 | Lighted                        |
| CHA | 22 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 23 | Unlighted                      |
| CHA | 24 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 25 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 26 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 27 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 28 | Group Quick Flashing           |
| CHA | 29 | Group Very Quick               |
| CHA | 30 | Very Quick                     |
| CHA | 31 | Quick                          |
| CHA | 32 | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 33 | Intensified                    |
| CHA | 34 | VALUE INTENTIONALLY LEFT BLANK |

|     |     |                                |
|-----|-----|--------------------------------|
| CHA | 35  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 36  | Directional                    |
| CHA | 37  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 38  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 39  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 40  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 41  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 42  | VALUE INTENTIONALLY LEFT BLANK |
| CHA | 43  | Directional Moiré              |
| CHA | 44  | Quick flashing                 |
| CHA | 45  | very quick flashing            |
| CHA | 46  | Flash / long flash             |
| CHA | 47  | Occulting / flash              |
| CHA | 48  | Fixed / long flash             |
| CHA | 49  | Occulting alternating          |
| CHA | 50  | Long flash alternating         |
| CHA | 51  | Flash alternating              |
| CHA | 52  | Group alternating              |
| CHA | 53  | 2 fixed (vertical)             |
| CHA | 54  | 2 fixed (horizontal)           |
| CHA | 55  | 3 fixed (vertical)             |
| CHA | 56  | 3 fixed (horizontal)           |
| CHA | 999 | Other                          |

#### COC

##### Conspicuous Category

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

#### COD

##### Certainty of Delineation

|     |   |                                |
|-----|---|--------------------------------|
| COD | 0 | Unknown                        |
| COD | 1 | Limits and Information Known   |
| COD | 2 | Limits and Information Unknown |

#### DAN

##### Description of Aids to Navigation

Textual description of aids to navigation marking a feature, e.g. Marked by buoys.

|     |   |              |
|-----|---|--------------|
| DAN | 0 | Actual Value |
|-----|---|--------------|

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

DAT Date

DMF Density Measure (Feature Count)  
Indicates the number of features of this type within an area.

DMF 0 Actual Value

| Units    | Format        | Range    | Increment | Max Char |
|----------|---------------|----------|-----------|----------|
| Features | Short Integer | 0±32,767 | 1 FEATURE |          |

EXS Existence Category  
The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

HDI Hydrographic Depth/Height Information

HDP Hydrographic Depth

The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

HDP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

HGT

Height Above Surface Level

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

LEN

Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

LOC

Location Category

Status of feature relative to surrounding area or water.

|        |   |
|--------|---|
| LOC 0  | Unknown   |
| LOC 1  | Above Surface/Does not Cover (Height Known)       |
| LOC 2  | Awash at Chart Datum                              |
| LOC 3  | Dries/Covers (Height Unknown)                     |
| LOC 4  | Below Surface /Submerged/Underground              |
| LOC 5  | Covered < 20 Meters                               |
| LOC 6  | Covered ≥ 20 Meters but < 30 Meters               |
| LOC 7  | Covered ≥ 30 Meters                               |
| LOC 8  | On Ground Surface                                 |
| LOC 9  | Depth Known                                       |
| LOC 10 | Depth Known (Cleared by Drag Wire)                |
| LOC 11 | Depth Unknown But Safe to Depth Shown             |
| LOC 12 | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC 13 | Hull Showing                                      |
| LOC 14 | Masts Showing                                     |
| LOC 15 | On Water Surface/Floating                         |
| LOC 16 | Partially Submerged                               |
| LOC 17 | Sunken/on sea bottom                              |
| LOC 19 | Above Surface/Does not Cover (Height Unknown)     |
| LOC 20 | Funnel Showing                                    |
| LOC 21 | Superstructure showing                            |
| LOC 22 | Off Shore   |
| LOC 23 | Below sea bottom                                  |
| LOC 24 | Suspended or elevated above sea bottom            |
| LOC 25 | Suspended/Elevation above Ground or Water Surface |
| LOC 28 | Masts and Funnel Showing                          |

|     |     |                        |
|-----|-----|------------------------|
| LOC | 30  | Non-Floating           |
| LOC | 31  | Elevated               |
| LOC | 32  | Depressed              |
| LOC | 33  | Not submerged          |
| LOC | 34  | Inland                 |
| LOC | 35  | Overhead               |
| LOC | 36  | Height Above Bottom    |
| LOC | 37  | Exact Position Known   |
| LOC | 38  | Exact Position Unknown |
| LOC | 39  | Depth Unknown          |
| LOC | 998 | Not applicable         |
| LOC | 999 | Other                  |

|     |    |                                |
|-----|----|--------------------------------|
| MCC |    | Material Composition Category  |
| MCC | 0  | Unknown                        |
| MCC | 4  | Ash                            |
| MCC | 5  | Asphalt                        |
| MCC | 6  | Basalt                         |
| MCC | 7  | Bedrock                        |
| MCC | 8  | Boulders                       |
| MCC | 9  | Brick                          |
| MCC | 10 | Calcareous                     |
| MCC | 11 | Cement                         |
| MCC | 12 | Chalk                          |
| MCC | 13 | Chemical                       |
| MCC | 14 | Cinders                        |
| MCC | 15 | Cirripedia                     |
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |

|     |     |                                |
|-----|-----|--------------------------------|
| MCC | 47  | Green Rocks                    |
| MCC | 48  | Ground                         |
| MCC | 49  | Ground (Shells)                |
| MCC | 50  | Heat                           |
| MCC | 51  | Iron                           |
| MCC | 52  | Lava                           |
| MCC | 53  | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54  | Lead                           |
| MCC | 55  | Loess                          |
| MCC | 56  | Lumber                         |
| MCC | 57  | Macadam                        |
| MCC | 58  | Madrepores                     |
| MCC | 59  | Manganese                      |
| MCC | 60  | Marble                         |
| MCC | 61  | Marl                           |
| MCC | 62  | Masonry (Brick/Stone)          |
| MCC | 63  | Mattes                         |
| MCC | 64  | Metal                          |
| MCC | 65  | Mud                            |
| MCC | 66  | Mussels                        |
| MCC | 67  | Oil                            |
| MCC | 68  | Oil Blister                    |
| MCC | 69  | Ooze                           |
| MCC | 70  | Oysters                        |
| MCC | 71  | Paper                          |
| MCC | 72  | Part Metal                     |
| MCC | 73  | Pebbles                        |
| MCC | 74  | Plastic                        |
| MCC | 75  | Polyzoa                        |
| MCC | 76  | Porphyry                       |
| MCC | 77  | Prestressed Concrete           |
| MCC | 78  | Pteropods                      |
| MCC | 79  | Pumice                         |
| MCC | 80  | Quartz                         |
| MCC | 81  | Radiolaria                     |
| MCC | 82  | Radioactive Material           |
| MCC | 83  | Reinforced Concrete            |
| MCC | 84  | Rock/Rocky                     |
| MCC | 85  | Rubber                         |
| MCC | 86  | Rubble                         |
| MCC | 87  | Salt                           |
| MCC | 88  | Sand                           |
| MCC | 89  | Sandstone                      |
| MCC | 90  | Schist                         |
| MCC | 91  | Spoils/Tailings                |
| MCC | 92  | Scoria                         |
| MCC | 93  | Sea Tangle                     |
| MCC | 94  | Seaweed                        |
| MCC | 95  | Sewage                         |
| MCC | 96  | Shells                         |
| MCC | 98  | Shingle                        |
| MCC | 99  | Silt                           |
| MCC | 100 | Silver                         |
| MCC | 101 | Slag                           |

|     |  |     |   |
|-----|--|-----|---|
|     | MCC  | 102 | Sludge  |
|     | MCC  | 103 | Snow/Ice  |
|     | MCC  | 104 | Soil  |
|     | MCC  | 105 | Spicules  |
|     | MCC  | 106 | Sponge  |
|     | MCC  | 107 | Steel   |
|     | MCC  | 108 | Stone   |
|     | MCC  | 109 | Sugar   |
|     | MCC  | 110 | Travertin   |
|     | MCC  | 111 | Tufa  |
|     | MCC  | 112 | Uranium   |
|     | MCC  | 113 | Vegetation Products   |
|     | MCC  | 114 | Volcanic  |
|     | MCC  | 115 | Volcanic Ash  |
|     | MCC  | 116 | Water   |
|     | MCC  | 117 | Wood  |
|     | MCC  | 118 | Zinc  |
|     | MCC  | 119 | Evaporites  |
|     | MCC  | 999 | Other   |
| MIA | Mine Actuation Independent Influence Acoustic Classification |     |   |
|     | MIA  | 1   | Low freq.   |
|     | MIA  | 2   | Audio freq.   |
|     | MIA  | 3   | High freq.  |
|     | MIA  | 4   | Multiple freq.  |
| MIC | Mine Actuation Independent Contact Classification            |     |   |
|     | MIC  | 1   | Plain   |
|     | MIC  | 2   | Snagline  |
|     | MIC  | 3   | Antenna   |
| MID | Mine Identity Classification                                 |     |   |
|     | MID  | 1   | Unknown   |
|     | MID  | 2   | Friend  |
|     | MID  | 3   | Hostile   |
|     | MID  | 4   | Neutral   |
| MII | Mine Actuation Independent Influence Classification          |     |   |
|     | MII  | 1   | Pressure  |
|     | MII  | 2   | Combined  |
|     | MII  | 3   | Classif. of mine actuation independent influence magnetic (MIM) |
|     | MII  | 4   | Classif. of mine actuation independent influence acoustic (MIA) |
| MIM | Mine Actuation Independent Influence Magnetic Classification |     |   |
|     | MIM  | 1   | Sensitive   |
|     | MIM  | 2   | Mid-sensitive   |
|     | MIM  | 3   | Course  |
| MIO | Mine Actuation Independent Other Classification              |     |   |
|     | MIO  | 1   | Electric fields   |
|     | MIO  | 2   | Laser sensors   |
|     | MIO  | 3   | Seismic   |

|     |  |   |  |
|-----|--|---|--|
|     | MIO  | 4 | Cosmic ray   |
|     | MIO  | 5 | Infra red  |
|     | MIO  | 6 | Redistribution   |
|     | MIO  | 7 | Velocity field   |
|     | MIO  | 8 | other  |
| MMT | Mine Special Information Special Mine Types Classification |   |  |
|     | MMT  | 1 | Anti-sweeper   |
|     | MMT  | 2 | Anti-hunter  |
|     | MMT  | 3 | Anti-hovercraft  |
|     | MMT  | 4 | Drill  |
|     | MMT  | 5 | Explosive filled                                       |
|     | MMT  | 6 | Exercise filled  |
|     | MMT  | 7 | Exercise   |
|     | MMT  | 8 | Practice   |
|     | MMT  | 9 | Disposal charge  |
| MNA | Mine Actuation Classification                              |   |  |
|     | MNA  | 1 | Classif. of mine actuation controlled (MNC)            |
|     | MNA  | 2 | Classif. of mine actuation independent (MNI)           |
|     | MNA  | 3 | Mine actuation no information                          |
| MNC | Mine Actuation Controlled Classification                   |   |  |
|     | MNC  | 1 | Mine actuation controlled cable                        |
|     | MNC  | 2 | Classif. of mine actuation controlled cableless (MNL)  |
| MNI | Mine Actuation Independent Classification                  |   |  |
|     | MNI  | 1 | Classif. of mine actuation independent contact (MIC)   |
|     | MNI  | 2 | Classif. of mine actuation independent influence (MII) |
|     | MNI  | 3 | Classif. of mine actuation independent other (MIO)     |
| MNL | Mine Actuation Controlled Cableless Classification         |   |  |
|     | MNL  | 1 | Frequency Communications Link                          |
|     | MNL  | 2 | Explicit Communications Link                           |
|     | MNL  | 3 | Alternating Current Communications Link                |
| MPC | Mine Position Classification                               |   |  |
|     | MPC  | 1 | Classif. of mine position ground (MPG)                 |
|     | MPC  | 2 | Classif. of mine position moored (MPM)                 |
|     | MPC  | 3 | Classif. of mine position other (MPO)                  |
|     | MPC  | 4 | Mine position no information.                          |
| MPG | Mine Position Ground Classification                        |   |  |
|     | MPG  | 1 | ≤ 500 kg/charge  |
|     | MPG  | 2 | > 500 kg/charge  |
| MPM | Mine Position Moored Classification                        |   |  |
|     | MPM  | 1 | Deep moored  |
|     | MPM  | 2 | Short tethered   |
| MPO | Mine Position Other Classification                         |   |  |
|     | MPO  | 1 | Drifting   |
|     | MPO  | 2 | Oscillating  |



|     |   |    |   |
|-----|---|----|---|
|     | MPO   | 3  | Creeping  |
|     | MPO   | 4  | Mobile  |
|     | MPO   | 5  | Homing  |
|     | MPO   | 6  | Rising  |
|     | MPO   | 7  | Bouquet   |
|     | MPO   | 8  | Active  |
| MSC | Mine Status Classification  |    |   |
|     | MSC   | 1  | Afloat  |
|     | MSC   | 2  | Sunk  |
|     | MSC   | 3  | Disposed  |
|     | MSC   | 4  | Fouled  |
|     | MSC   | 5  | Exploded  |
|     | MSC   | 6  | Countermined  |
|     | MSC   | 7  | Neutralized   |
|     | MSC   | 8  | Rendered safe   |
|     | MSC   | 9  | Recovered   |
|     | MSC   | 10 | Removed   |
| MSD | Mine Special Information Special Devices Classification               |    |   |
|     | MSD   | 1  | Arming delay  |
|     | MSD   | 2  | Ship count  |
|     | MSD   | 3  | Intermittent arming   |
|     | MSD   | 4  | Delayed rising  |
|     | MSD   | 5  | Obstructors   |
|     | MSD   | 6  | Sterilizers   |
|     | MSD   | 7  | Flooders  |
|     | MSD   | 8  | Anti-watching   |
|     | MSD   | 9  | Classif. -mine special info special devices anti-sweep wire (MSW) |
|     | MSD   | 10 | Classif. -mine special info special devices anti-recovery (MSR)   |
|     | MSD   | 11 | Classif. -mine special info special devices anti-hunting (MSH)    |
| MSH | Mine Special Information Special Devices Anti-Hunting Classification  |    |   |
|     | MSH   | 1  | Anechoic coating  |
|     | MSH   | 2  | Automatic mine burial   |
|     | MSH   | 3  | Irregular shaping   |
|     | MSH   | 4  | Acoustic impedance  |
|     | MSH   | 5  | Acoustic transparency   |
|     | MSH   | 6  | Non-metallic case   |
|     | MSH   | 7  | Sonar decoys  |
|     | MSH   | 8  | Other   |
| MSI | Mine Special Information Classification                               |    |   |
|     | MSI   | 1  | Classif. of mine special info usefulness (MSU)                    |
|     | MSI   | 2  | Classif. of mine special info special mine types (MMT)            |
|     | MSI   | 3  | Classif. of mine special info special devices (MSD)               |
| MSR | Mine Special Information Special Devices Anti-Recovery Classification |    |   |
|     | MSR   | 1  | Switch  |
|     | MSR   | 2  | Mooring level switch  |
|     | MSR   | 3  | Stripping equipment   |

|     |   |                                    |
|-----|---|------------------------------------|
| MSR | 4   | Other                              |
| MSU | Mine Special Information Usefulness Types                               |                                    |
| MSU | 1   | General purpose ground             |
| MSU | 2   | Deep water                         |
| MSU | 3   | Medium depth anti-submarine        |
| MSU | 4   | Continental shelf                  |
| MSU | 5   | Maritime anti-invasion             |
| MSU | 6   | Anti-surface effect vehicle        |
| MSW | Mine Special Information Special Devices Anti-Sweep Wire Classification |                                    |
| MSW | 1   | Chain moorings                     |
| MSW | 2   | Sprocket                           |
| MSW | 3   | Grapnel                            |
| MSW | 4   | Cutters                            |
| MSW | 5   | Sensitive tubing                   |
| MSW | 6   | Other                              |
| MTN | Mine Track Number   |                                    |
| NAM | Name  |                                    |
|     | Any Identifier or code.   |                                    |
| NAM | 0   | Actual Value                       |
|     | <u>Units</u>  | <u>Format</u>                      |
|     | Text String   | Lexical                            |
|     | <u>Range</u>  | <u>Increment</u>                   |
|     |   | 80                                 |
| NST | Navigation System Types   |                                    |
| OBC | Oil Barrier Classification  |                                    |
| OBC | 0   | Undefined                          |
| OBC | 1   | Oil retention (high pressure pipe) |
| OBC | 2   | Floating oil barrier               |
| PHT | Predominant Height  |                                    |
| PRO | Product Category  |                                    |
| PRO | 0   | Unknown                            |
| PRO | 5   | Asphalt                            |
| PRO | 13  | Chemical                           |
| PRO | 22  | Conglomerate                       |
| PRO | 26  | Desalinated Water                  |
| PRO | 30  | Earthen                            |
| PRO | 31  | Electric                           |
| PRO | 33  | Explosives                         |
| PRO | 35  | Food                               |
| PRO | 38  | Gas                                |
| PRO | 39  | Gasoline                           |
| PRO | 50  | Heat                               |
| PRO | 52  | Lava                               |
| PRO | 67  | Oil                                |
| PRO | 69  | Ooze                               |
| PRO | 82  | Radioactive Material               |
| PRO | 102   | Sludge                             |

|     |     |                    |
|-----|-----|--------------------|
| PRO | 116 | Water              |
| PRO | 128 | Refuse             |
| PRO | 130 | None               |
| PRO | 132 | Not Applicable     |
| PRO | 133 | Telecommunications |
| PRO | 997 | Not Applicable     |
| PRO | 998 | Multiple           |
| PRO | 999 | Other              |

SMC      Surface Material Category

SOH      Severity of Hazard

|     |     |   |
|-----|-----|---|
| SOH | 0   | Unknown   |
| SOH | 1   | Dangerous   |
| SOH | 2   | Non-Dangerous   |
| SOH | 3   | Obstruction   |
| SOH | 99  | Non-Dangerous to surface navigation, but avoid anchoring/trawling |
| SOH | 999 | Other   |

SSC      Structure Shape Category  
Geometric form, appearance, or configuration of the feature.

|     |    |                                |
|-----|----|--------------------------------|
| SSC | 0  | Unknown                        |
| SSC | 1  | Barrel, Ton                    |
| SSC | 2  | Blimp                          |
| SSC | 3  | Boat Hull (Float)              |
| SSC | 4  | Bullet                         |
| SSC | 5  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 6  | Conical /Peaked/NUN            |
| SSC | 7  | Cylindrical (Upright)/CAN      |
| SSC | 9  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 10 | Pillar, Spindle                |
| SSC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 12 | Pyramid                        |
| SSC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 14 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 15 | Solid/filled                   |
| SSC | 16 | Spar                           |
| SSC | 17 | Spherical (Hemispherical)      |
| SSC | 18 | Truss                          |
| SSC | 19 | With Radome                    |
| SSC | 20 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 21 | Artificial Mountain            |
| SSC | 22 | Crescent                       |
| SSC | 23 | Ferris Wheel                   |
| SSC | 24 | Enclosed                       |
| SSC | 25 | Roller coaster                 |
| SSC | 26 | Lateral                        |
| SSC | 27 | Mounds                         |
| SSC | 28 | Ripple                         |
| SSC | 29 | Star                           |
| SSC | 30 | Transverse                     |
| SSC | 31 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 33 | VALUE INTENTIONALLY LEFT BLANK |

|     |     |                                   |
|-----|-----|-----------------------------------|
| SSC | 34  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 35  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 36  | Windmotor                         |
| SSC | 38  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 40  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 46  | Open                              |
| SSC | 52  | 'A' Frame                         |
| SSC | 53  | 'H' Frame                         |
| SSC | 54  | 'I' Frame                         |
| SSC | 56  | 'Y' Frame                         |
| SSC | 57  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 58  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 59  | Telescoping Gasholder (Gasometer) |
| SSC | 60  | Mast                              |
| SSC | 61  | Tripod                            |
| SSC | 62  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 63  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 65  | Cylindrical with flat top         |
| SSC | 66  | Cylindrical with domed top        |
| SSC | 71  | Cylindrical/Peaked                |
| SSC | 73  | Superbuoy                         |
| SSC | 74  | 'T' Frame                         |
| SSC | 75  | Tetrahedron                       |
| SSC | 76  | Funnel                            |
| SSC | 77  | Arch                              |
| SSC | 78  | Multi-Arch                        |
| SSC | 79  | Round                             |
| SSC | 80  | Rectangular                       |
| SSC | 81  | Dragons Teeth                     |
| SSC | 82  | I-Beam                            |
| SSC | 83  | Square                            |
| SSC | 84  | Irregular                         |
| SSC | 85  | Diamond Shaped Buoy               |
| SSC | 86  | Oval                              |
| SSC | 87  | Dome                              |
| SSC | 107 | Tower                             |
| SSC | 108 | Scanner                           |
| SSC | 109 | Obelisk                           |
| SSC | 999 | Other                             |

SST Sound Signal Type

TXT Text Attribute  
Narrative or other description.  
TXT 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

VAL Value

VRR Vertical Reference Category  
Relative location referenced to sounding datum, unless otherwise indicated.  
VRR 0 Unknown

|     |   |  |
|-----|---|--|
| VRR | 1 | Above Surface/Does not cover (At High Water) |
| VRR | 2 | Awash at Sounding Datum                      |
| VRR | 4 | Below Surface/Submerged                      |
| VRR | 8 | Covers and Uncovers                          |
| VRR | 9 | Not Applicable                               |

**WID**      **Width**  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID    0      Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**WRK**      **Wreck Classification**

|     |   |   |
|-----|---|---|
| WRK | 0 | Undefined   |
| WRK | 1 | Non-dangerous wreck                                 |
| WRK | 2 | Dangerous wreck                                     |
| WRK | 3 | Remains of wreck / foul area                        |
| WRK | 4 | Wreck showing mast / masts                          |
| WRK | 5 | Wreck showing any portion of hull or superstructure |

**ZV2**      **Highest Z-Value**

Elevation above a given datum to the highest portion of the feature.

ZV2    0      Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

#### Miscellaneous Dangers/Hazards Feature Class

**ID**

**F-CODE/DESCRIPTION**

|       |   |
|-------|---|
| BD000 | Underwater-Danger/Hazard  |
| BD005 | Miscellaneous Underwater Feature  |
| BD050 | Foul Ground<br>A region of comparatively shallow water strewn with rocks, boulders, coral, wreckage, or other obstructions, making it unsuitable for anchoring, grounding, or ground fishing. |
| BD070 | Obstruction (Nautical)<br>A danger to navigation, the exact nature of which is not specified, or has not been determined.   |

**ACC**

**Accuracy Category**  
Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |

|     |   |            |
|-----|---|------------|
| ACC | 5 | Disputed   |
| ACC | 6 | Undisputed |
| ACC | 7 | Precise    |
| ACC | 8 | Abrogated  |

AOO

Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

ATN

Aids to Navigation

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

BMC

Bottom Material Composition

COC

Conspicuous Category

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

DAN

Description of Aids to Navigation

Textual description of aids to navigation marking a feature, e.g. Marked by buoys.

DAN 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

DAG

Type of Danger Category

DAT

Date

EXS

Existence Category

The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

HDI Hydrographic Depth/Height Information

HDP Hydrographic Depth

The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

HDP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

HGT Height Above Surface Level

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

LEN

Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

SFC

Sea Floor Feature Category

SOH

Severity of Hazard

SOH 0 Unknown

SOH 1 Dangerous

SOH 2 Non-Dangerous

SOH 3 Obstruction

SOH 99 Non-Dangerous to surface navigation, but avoid anchoring/trawling

SOH 999 Other

TXT

Text Attribute

Narrative or other description.

TXT 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

VAL

Value

WID

Width

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

ZV2

Highest Z-Value

Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |



## Depth Regions Feature Class

ID

### F-CODE/DESCRIPTION

- BE010 Depth Curve  
A navigational safety line indicating that no sounding of a lesser depth exists seaward of the line, but greater depths may occur on the shallow side of the line.
- BE015 Depth Contour  
A line connecting points of equal depth at and below the hydrographic datum
- BE019 Depth Area  
Water area containing soundings within a defined range of values permanently at or below sounding datum.
- BE021 Drying Line, Low Water Line-LWL  
Delineates an area that covers and uncovers depending on the elevation of the surface above chart datum.
- BE022 Sand Line  
Delineates an area of sand that covers and uncovers depending on the elevation of the surface above chart datum.
- BE023 Mud Line  
Delineates an area of mud that covers and uncovers depending on the elevation of the surface above chart datum.
- BE030 Track Swath  
Area of horizontal depth coverage recorded by SONAR array systems.
- BE040 Track Line  
The path of travel with respect tot the earth as drawn on the chart and including the sounding information collected along the line.

ACC Accuracy Category  
Accuracy of geographic position.

- ACC 0 Unknown  
ACC 1 Accurate  
ACC 2 Approximate  
ACC 3 Doubtful  
ACC 5 Disputed  
ACC 6 Undisputed  
ACC 7 Precise  
ACC 8 Abrogated

ARA Area Coverage Attribute  
The absolute area within the delineation of the feature.  
ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

CRV Depth Curve or Contour Value

CFH Depth Curve or Contour Value High (maximum value of depth curve polygon)

CFL Depth Curve or Contour Value Low (minimum value of depth curve polygon)

HDP Hydrographic Depth  
The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

HDP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

UNI Units Category

VAL Value

VDC Vertical Datum Category

|         |                                      |
|---------|--------------------------------------|
| VDC 0   | Unknown                              |
| VDC 1   | VALUE INTENTIONALLY LEFT BLANK       |
| VDC 2   | High Water                           |
| VDC 3   | Higher High Water                    |
| VDC 4   | Indian Spring Low Water              |
| VDC 5   | Low Water                            |
| VDC 6   | Lower Low Water                      |
| VDC 7   | Mean High Water                      |
| VDC 8   | Mean High Water Neaps                |
| VDC 9   | Mean High Water Springs              |
| VDC 10  | Mean Higher High Water               |
| VDC 11  | Mean Low Water                       |
| VDC 12  | Mean Low Water Neaps                 |
| VDC 13  | Mean Low Water Springs               |
| VDC 14  | Mean Lower Low Water                 |
| VDC 15  | Mean Sea Level                       |
| VDC 16  | Mean Tide Level                      |
| VDC 17  | Neap Tide                            |
| VDC 18  | Spring Tide                          |
| VDC 19  | Mean Lower Low Water Springs         |
| VDC 20  | Lowest Astronomical Tide             |
| VDC 21  | Chart Datum (Unspecified)            |
| VDC 22  | Highest Astronomical Tide            |
| VDC 24  | Mean Higher Water                    |
| VDC 26  | Highest Normal High Water            |
| VDC 28  | Highest High Water                   |
| VDC 30  | Indian Spring High Water             |
| VDC 90  | Lowest low water                     |
| VDC 91  | Lowest low water springs             |
| VDC 92  | Approximate mean low water springs   |
| VDC 93  | Low water springs                    |
| VDC 94  | Approximate lowest astronomical tide |
| VDC 95  | Nearly lowest low water              |
| VDC 96  | Approximate mean low water           |
| VDC 97  | Approximate mean lower low water     |
| VDC 98  | Approximate mean sea level           |
| VDC 99  | High water springs                   |
| VDC 999 | Other                                |

## Depth Sounding Feature Class

ID

F-CODE/DESCRIPTION

BE020 Sounding

A measured water depth or spot depth which has been reduced to chart datum.

ACC

Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

DAT

Date

EXS

Existence Category

The state or condition of the feature.

|     |    |                         |
|-----|----|-------------------------|
| EXS | 0  | Unknown                 |
| EXS | 1  | Definite                |
| EXS | 2  | Doubtful                |
| EXS | 3  | Reported                |
| EXS | 5  | Under Construction      |
| EXS | 6  | Abandoned/Disused       |
| EXS | 7  | Destroyed               |
| EXS | 10 | Proposed                |
| EXS | 11 | Temporary               |
| EXS | 12 | Alternate               |
| EXS | 18 | Permanent               |
| EXS | 25 | Not Maintained          |
| EXS | 26 | Maintained              |
| EXS | 27 | Closed/Locked           |
| EXS | 28 | Operational             |
| EXS | 30 | Not Isolated            |
| EXS | 31 | Isolated                |
| EXS | 33 | Ruined                  |
| EXS | 35 | Other                   |
| EXS | 44 | Approximate/About       |
| EXS | 45 | Natural                 |
| EXS | 46 | Man-made                |
| EXS | 47 | Swept                   |
| EXS | 48 | Controlled              |
| EXS | 49 | Non-Controlled          |
| EXS | 50 | Non-Tidal               |
| EXS | 51 | Tidal/Tidal Fluctuation |

|     |     |                        |
|-----|-----|------------------------|
| EXS | 52  | Dissipating            |
| EXS | 53  | Incomplete             |
| EXS | 54  | Antique/Ancient        |
| EXS | 55  | Unexamined/Unsurveyed  |
| EXS | 56  | Unattended/Unwatched   |
| EXS | 59  | Not Usable             |
| EXS | 60  | Indefinite (Shoreline) |
| EXS | 61  | Definite Shoreline     |
| EXS | 62  | Partially Destroyed    |
| EXS | 65  | Inactive               |
| EXS | 998 | Not Applicable         |
| EXS | 999 | Other                  |

HDH      Hydrographic Drying Height

HDP      Hydrographic Depth  
The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

HDP    0      Actual Value

| <u>Units</u> | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|----------------|--------------|------------------|-----------------|
| Meters       | Floating Point |              | 0.1 M            |                 |

SND      Sounding Category

SVC      Sounding Velocity

VAL      Value

#### Tides Feature Class

ID

F-CODE/DESCRIPTION

BG020 Tide Gauge  
An instrument for measuring the height of the tide.  
BG030 Tide Data Point  
Place for which tabulated tidal stream data are given.  
BG050 Surf

BAN      Breaker Angle

BAP      Breaker Period

DBH      Dominant Breaker Height

DBT      Dominant Breaker Type

LIT      Littoral Current

*MBH*      *Maximum Breaker Height*

| MCC    | Material Composition Category  |  |
|--------|--------------------------------|--|
| MCC 0  | Unknown                        |  |
| MCC 4  | Ash                            |  |
| MCC 5  | Asphalt                        |  |
| MCC 6  | Basalt                         |  |
| MCC 7  | Bedrock                        |  |
| MCC 8  | Boulders                       |  |
| MCC 9  | Brick                          |  |
| MCC 10 | Calcareous                     |  |
| MCC 11 | Cement                         |  |
| MCC 12 | Chalk                          |  |
| MCC 13 | Chemical                       |  |
| MCC 14 | Cinders                        |  |
| MCC 15 | Cirripedia                     |  |
| MCC 16 | Clay                           |  |
| MCC 17 | Coal                           |  |
| MCC 18 | Cobble                         |  |
| MCC 19 | Coke                           |  |
| MCC 20 | Composition                    |  |
| MCC 21 | Concrete                       |  |
| MCC 22 | Conglomerate                   |  |
| MCC 23 | Copper                         |  |
| MCC 24 | Coral                          |  |
| MCC 25 | Coral Head                     |  |
| MCC 26 | Desalinated Water              |  |
| MCC 27 | Diamonds                       |  |
| MCC 28 | Diatoms                        |  |
| MCC 29 | Dolomite                       |  |
| MCC 30 | Earthen                        |  |
| MCC 32 | Eroded Lands                   |  |
| MCC 34 | Flynch                         |  |
| MCC 35 | Food                           |  |
| MCC 36 | Foraminifera                   |  |
| MCC 37 | Fucus                          |  |
| MCC 40 | Glass                          |  |
| MCC 41 | Globigerina                    |  |
| MCC 42 | Gold                           |  |
| MCC 43 | Granite                        |  |
| MCC 44 | VALUE INTENTIONALLY LEFT BLANK |  |
| MCC 45 | Grass/Thatch                   |  |
| MCC 46 | Gravel                         |  |
| MCC 47 | Green Rocks                    |  |
| MCC 48 | Ground                         |  |
| MCC 49 | Ground (Shells)                |  |
| MCC 50 | Heat                           |  |
| MCC 51 | Iron                           |  |
| MCC 52 | Lava                           |  |
| MCC 53 | VALUE INTENTIONALLY LEFT BLANK |  |
| MCC 54 | Lead                           |  |
| MCC 55 | Loess                          |  |
| MCC 56 | Lumber                         |  |
| MCC 57 | Macadam                        |  |

|     |     |                       |
|-----|-----|-----------------------|
| MCC | 58  | Madrepores            |
| MCC | 59  | Manganese             |
| MCC | 60  | Marble                |
| MCC | 61  | Marl                  |
| MCC | 62  | Masonry (Brick/Stone) |
| MCC | 63  | Mattes                |
| MCC | 64  | Metal                 |
| MCC | 65  | Mud                   |
| MCC | 66  | Mussels               |
| MCC | 67  | Oil                   |
| MCC | 68  | Oil Blister           |
| MCC | 69  | Ooze                  |
| MCC | 70  | Oysters               |
| MCC | 71  | Paper                 |
| MCC | 72  | Part Metal            |
| MCC | 73  | Pebbles               |
| MCC | 74  | Plastic               |
| MCC | 75  | Polyzoa               |
| MCC | 76  | Porphyry              |
| MCC | 77  | Prestressed Concrete  |
| MCC | 78  | Pteropods             |
| MCC | 79  | Pumice                |
| MCC | 80  | Quartz                |
| MCC | 81  | Radiolaria            |
| MCC | 82  | Radioactive Material  |
| MCC | 83  | Reinforced Concrete   |
| MCC | 84  | Rock/Rocky            |
| MCC | 85  | Rubber                |
| MCC | 86  | Rubble                |
| MCC | 87  | Salt                  |
| MCC | 88  | Sand                  |
| MCC | 89  | Sandstone             |
| MCC | 90  | Schist                |
| MCC | 91  | Spoils/Tailings       |
| MCC | 92  | Scoria                |
| MCC | 93  | Sea Tangle            |
| MCC | 94  | Seaweed               |
| MCC | 95  | Sewage                |
| MCC | 96  | Shells                |
| MCC | 98  | Shingle               |
| MCC | 99  | Silt                  |
| MCC | 100 | Silver                |
| MCC | 101 | Slag                  |
| MCC | 102 | Sludge                |
| MCC | 103 | Snow/Ice              |
| MCC | 104 | Soil                  |
| MCC | 105 | Spicules              |
| MCC | 106 | Sponge                |
| MCC | 107 | Steel                 |
| MCC | 108 | Stone                 |
| MCC | 109 | Sugar                 |
| MCC | 110 | Travertin             |
| MCC | 111 | Tufa                  |
| MCC | 112 | Uranium               |

|     |     |                     |
|-----|-----|---------------------|
| MCC | 113 | Vegetation Products |
| MCC | 114 | Volcanic            |
| MCC | 115 | Volcanic Ash        |
| MCC | 116 | Water               |
| MCC | 117 | Wood                |
| MCC | 118 | Zinc                |
| MCC | 119 | Evaporites          |
| MCC | 999 | Other               |

*NSL*      *Number of Surf Lines*

*SBH*      *Significant Breaker Height*

*WD7*      *Surf Zone Width*

*WIR*      *Wind Direction*

*WIS*      *Wind Speed*

#### **Currents Feature Class**

BG010 Current Flow  
The flow direction of a current.

BG011 Tideway  
A natural watercourse in intertidal areas where water flows during the ebb and flow.

BG012 Water Turbulence  
The disturbance of water caused by the interaction of any combination of waves, currents, eddies, tidal streams, wind, shoal patches and obstructions.

BG040 Current Diagram  
A graph or chartlet showing the average speed of the flood and ebb currents at different periods of the current cycle.

CRN      Current Rate Minimum  
Minimum speed of current.  
CRN    0      Actual Value

| <u>Units</u> | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|----------------|--------------|------------------|-----------------|
| Knots        | Floating Point |              | 0.1 KNOT         |                 |

CRS      Current Rate (Speed)  
Current speed in knots.  
CRS    0      Actual Value

| <u>Units</u> | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|----------------|--------------|------------------|-----------------|
| Knots        | Floating Point |              | 0.1 KNOT         |                 |

CRX      Current Rate Maximum  
Maximum speed of current.  
CRX    0      Actual Value

|     | Units   | Format         | Range                   | Increment | Max Char |
|-----|---|----------------|-------------------------|-----------|----------|
|     | Knots   | Floating Point |                         | 0.1 KNOT  |          |
| CUR | Current Type Category                         |                |                         |           |          |
|     | CUR   | 0              | Unknown                 |           |          |
|     | CUR   | 1              | Ebb                     |           |          |
|     | CUR   | 2              | Flood                   |           |          |
|     | CUR   | 3              | General Flow            |           |          |
|     | CUR   | 4              | River Flow              |           |          |
|     | CUR   | 5              | Ocean Flow              |           |          |
|     | CUR   | 999            | Other                   |           |          |
| DOF | Direction of Flow                             |                |                         |           |          |
|     | Bearing of movement or direction of the flow. |                |                         |           |          |
|     | DOF   | 0              | Actual Value            |           |          |
|     | Units   | Format         | Range                   | Increment | Max Char |
|     | Degrees                                       | Short Integer  | 0-359                   | 1 DEG     |          |
| EXS | Existence Category                            |                |                         |           |          |
|     | The state or condition of the feature.        |                |                         |           |          |
|     | EXS   | 0              | Unknown                 |           |          |
|     | EXS   | 1              | Definite                |           |          |
|     | EXS   | 2              | Doubtful                |           |          |
|     | EXS   | 3              | Reported                |           |          |
|     | EXS   | 5              | Under Construction      |           |          |
|     | EXS   | 6              | Abandoned/Disused       |           |          |
|     | EXS   | 7              | Destroyed               |           |          |
|     | EXS   | 10             | Proposed                |           |          |
|     | EXS   | 11             | Temporary               |           |          |
|     | EXS   | 12             | Alternate               |           |          |
|     | EXS   | 18             | Permanent               |           |          |
|     | EXS   | 25             | Not Maintained          |           |          |
|     | EXS   | 26             | Maintained              |           |          |
|     | EXS   | 27             | Closed/Locked           |           |          |
|     | EXS   | 28             | Operational             |           |          |
|     | EXS   | 30             | Not Isolated            |           |          |
|     | EXS   | 31             | Isolated                |           |          |
|     | EXS   | 33             | Ruined                  |           |          |
|     | EXS   | 35             | Other                   |           |          |
|     | EXS   | 44             | Approximate/About       |           |          |
|     | EXS   | 45             | Natural                 |           |          |
|     | EXS   | 46             | Man-made                |           |          |
|     | EXS   | 47             | Swept                   |           |          |
|     | EXS   | 48             | Controlled              |           |          |
|     | EXS   | 49             | Non-Controlled          |           |          |
|     | EXS   | 50             | Non-Tidal               |           |          |
|     | EXS   | 51             | Tidal/Tidal Fluctuation |           |          |
|     | EXS   | 52             | Dissipating             |           |          |
|     | EXS   | 53             | Incomplete              |           |          |
|     | EXS   | 54             | Antique/Ancient         |           |          |
|     | EXS   | 55             | Unexamined/Unsurveyed   |           |          |
|     | EXS   | 56             | Unattended/Unwatched    |           |          |



|     |     |                        |
|-----|-----|------------------------|
| EXS | 59  | Not Usable             |
| EXS | 60  | Indefinite (Shoreline) |
| EXS | 61  | Definite Shoreline     |
| EXS | 62  | Partially Destroyed    |
| EXS | 65  | Inactive               |
| EXS | 998 | Not Applicable         |
| EXS | 999 | Other                  |

HS1 Current Information (1)

HS2 Current Information (2)

NAM Name  
Any Identifier or code.  
NAM 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

# **Inland Water Feature Class**

ID

## **F-CODE/DESCRIPTION**

BH000 Inland Water  
Any known inland waterway body, such as lake/pond, reservoir, river/stream, etc., requiring separation into individual features due to status/type grouping that is currently indeterminable.

BH010 Aqueduct  
A pipe or artificial channel designed to transport water from a remote source, usually by gravity.

BH020 Canal  
A man-made or improved natural waterway used for transportation.

BH030 Ditch  
A channel constructed for the purpose of irrigation or drainage.

BH050 Fish Hatchery/Fish Farm/Marine Farm  
An enclosure of water used for the breeding and/or rearing of fish.

BH060 Flume  
An open, inclined channel which carries water for use in such operations as mining or logging.

BH075 Fountain  
An artificial spring with water

BH080 Lake/Pond  
A body of water surrounded by land.

BH095 Marsh/Swamp  
A saturated area, at times covered with water, supporting vegetation which may include trees.

BH100 Moat  
A trench usually filled with water, that surrounds a body of land.

BH110 Penstock  
A pipeline or channel generally used by hydroelectric plants or water mills to transport water by gravity or under pressure.

- BH115 Underground Water/Phreatic Water  
Water situated underground but reachable by wells.
- BH120 Rapids  
A place in a stream or river where the current is swift and the surface is usually broken by boulders and rocks.
- BH130 Reservoir  
A man-made enclosure or area formed for the storage of water.
- BH140 River/Stream  
A natural flowing watercourse.
- BH150 Salt Pan  
A flat area of natural surface salt deposits
- BH155 Salt Evaporator  
Shallow pools, normally man-made, used for the natural evaporation of water for the collection of salt.
- BH165 Spillway  
A passage for surplus water to run over or around a dam.
- BH170 Spring/Water-Hole  
A natural outflow of water from below the ground surface.
- BH180 Waterfall  
A vertical or nearly vertical descent of water.
- BH190 Lagoon/Reef Pool  
Open body of water separated from the sea by sand bank or coral reef.
- SA060 Covered Drainage  
A natural watercourse or man-made waterway that is covered preventing its observation or further classification.

#### ACC

##### Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

#### AOO

##### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|     |   |              |
|-----|---|--------------|
| AOO | 0 | Actual Value |
|-----|---|--------------|

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

#### ARA

##### Area Coverage Attribute

The absolute area within the delineation of the feature.

|     |   |              |
|-----|---|--------------|
| ARA | 0 | Actual Value |
|-----|---|--------------|

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

|   |  |                                 |
|---|--|---------------------------------|
| ATC   | Aqueduct Type Category   |                                 |
|   | ATC  | 0 Unknown                       |
|   | ATC  | 1 Qanat/Kanat/Karez Shaft       |
|   | ATC  | 2 Other                         |
|   | ATC  | 3 Underground Aqueduct          |
| ATN   | Aids to Navigation   |                                 |
|   | ATN  | 0 Unknown                       |
|   | ATN  | 1 Marked                        |
|   | ATN  | 2 Unmarked                      |
|   | ATN  | 3 Lit                           |
|   | ATN  | 4 Unlit                         |
| ATN   | ATN  | 999 Other                       |
|   | Bank Gradient Left   |                                 |
|   | Slope of the left bank (facing downstream) above water level.                                  |                                 |
|   | BGL  | 0 Actual Value                  |
|   | Units  | Format Range Increment Max Char |
|   | Percent  | Short integer ±90 1 %           |
| BGR   | Bank Gradient Right  |                                 |
|   | Slope of the right bank (facing downstream) above water level.                                 |                                 |
|   | BGL  | 0 Actual Value                  |
|   | Units  | Format Range Increment Max Char |
|   | Percent  | Short integer ±90 1 %           |
|   | BHL  | Bank Height Left                |
| Height of the left bank above the water level (facing downstream) to the average water level. |  |                                 |
| BHL   |  | 0 Actual Value                  |
| Units   |  | Format Range Increment Max Char |
| Decimeter   |  | Short integer 0±32,767 1 DM     |
| BHR   |  | Bank Height Right               |
|   | Height of the right bank above the water level (facing downstream) to the average water level. |                                 |
|   | BHL  | 0 Actual Value                  |
|   | Units  | Format Range Increment Max Char |
|   | Decimeter  | Short integer 0±32,767 1 DM     |
|   | BUD  | Brush/Undergrowth Density Code  |
| Density of brush or undergrowth.  |  |                                 |
| BUD   |  | 0 Unknown                       |
| BUD   |  | 1 Open (≤5%)                    |
| BUD   |  | 2 Sparse (>5%≤15%)              |
| BUD   |  | 3 Medium (>15%≤50%)             |
| BUD   |  | 4 Dense (>50%)                  |
| BUD   |  | 5 Not Applicable                |

|     |   |                              |
|-----|---|------------------------------|
| BVL | 0 | Unknown                      |
| BVL | 1 | Open ( $\leq 5\%$ )          |
| BVL | 2 | Sparse ( $>5\% \leq 15\%$ )  |
| BVL | 3 | Medium ( $>15\% \leq 50\%$ ) |
| BVL | 4 | Dense ( $>50\%$ )            |

|     |   |                              |
|-----|---|------------------------------|
| BVR | 0 | Unknown                      |
| BVR | 1 | Open ( $\leq 5\%$ )          |
| BVR | 2 | Sparse ( $>5\% \leq 15\%$ )  |
| BVR | 3 | Medium ( $>15\% \leq 50\%$ ) |
| BVR | 4 | Dense ( $>50\%$ )            |

|     |   |                |
|-----|---|----------------|
| CDA | 1 | Uncovered      |
| CDA | 2 | Covered        |
| CDA | 3 | Not Applicable |

|                                |                |
|--------------------------------|----------------|
| Covered Drain Length           |                |
| Length of covered drainage way |                |
| CDL                            | 0 Actual Value |

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
| Meters       | Short Integer | 0±32,767     | 1 M              |                 |

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

|     |   |              |
|-----|---|--------------|
| DEP | 0 | Actual Value |
|-----|---|--------------|

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

DMT      Density Measure (% of Tree Cover)  
 Canopy cover measured by percent within area of feature during the summer season.  
 DMT    0      Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Percent | Short Integer | 0-100 | 1 %       |          |

EXS      Existence Category  
 The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

HGT      Height Above Surface Level  
 Distance measured from the lowest point of the base at ground or water level  
 (downhill side/downstream side) to the tallest point of the feature.  
 HGT    0      Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

HDP

#### Hydrographic Depth

The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

HDP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

HFC

#### Hydrological Form Category

Form or configuration of the hydrological feature.

|     |     |                                     |
|-----|-----|-------------------------------------|
| HFC | 0   | Unknown                             |
| HFC | 1   | Channelized Stream                  |
| HFC | 2   | Disappearing                        |
| HFC | 7   | Non-Tidal                           |
| HFC | 8   | Normal Channel                      |
| HFC | 10  | Tidal /Tidal Fluctuating            |
| HFC | 14  | Braided                             |
| HFC | 16  | Dissipating                         |
| HFC | 19  | Gorge                               |
| HFC | 21  | Wadi/Wash                           |
| HFC | 30  | Disappearing in sinkhole            |
| HFC | 31  | Disappearing in other than sinkhole |
| HFC | 32  | Oxbow                               |
| HFC | 33  | Split stream                        |
| HFC | 999 | Other                               |

HYC

#### Hydrological Category

Identifies the annual water content of the feature.

|     |     |  |
|-----|-----|--|
| HYC | 0   | Unknown                                  |
| HYC | 2   | Not Applicable                           |
| HYC | 3   | Dry                                      |
| HYC | 6   | Non-Perennial /Intermittent /Fluctuating |
| HYC | 8   | Perennial /Permanent                     |
| HYC | 999 | Other                                    |

LAB

#### Feature Label

Label applied to the feature.

LAB 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

LEN

#### Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

| LOC |     | Location Category  |
|-----|-----|--|
|     |     | Status of feature relative to surrounding area or water. |
| LOC | 0   | Unknown  |
| LOC | 1   | Above Surface/Does not Cover (Height Known)              |
| LOC | 2   | Awash at Chart Datum                                     |
| LOC | 3   | Dries/Covers (Height Unknown)                            |
| LOC | 4   | Below Surface /Submerged/Underground                     |
| LOC | 5   | Covered < 20 Meters                                      |
| LOC | 6   | Covered $\geq$ 20 Meters but < 30 Meters                 |
| LOC | 7   | Covered $\geq$ 30 Meters                                 |
| LOC | 8   | On Ground Surface  |
| LOC | 9   | Depth Known  |
| LOC | 10  | Depth Known (Cleared by Drag Wire)                       |
| LOC | 11  | Depth Unknown But Safe to Depth Shown                    |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                           |
| LOC | 13  | Hull Showing   |
| LOC | 14  | Masts Showing  |
| LOC | 15  | On Water Surface/Floating                                |
| LOC | 16  | Partially Submerged                                      |
| LOC | 17  | Sunken/on sea bottom                                     |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)            |
| LOC | 20  | Funnel Showing   |
| LOC | 21  | Superstructure showing                                   |
| LOC | 22  | Off Shore  |
| LOC | 23  | Below sea bottom   |
| LOC | 24  | Suspended or elevated above sea bottom                   |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface        |
| LOC | 28  | Masts and Funnel Showing                                 |
| LOC | 30  | Non-Floating   |
| LOC | 31  | Elevated   |
| LOC | 32  | Depressed  |
| LOC | 33  | Not submerged  |
| LOC | 34  | Inland   |
| LOC | 35  | Overhead   |
| LOC | 36  | Height Above Bottom                                      |
| LOC | 37  | Exact Position Known                                     |
| LOC | 38  | Exact Position Unknown                                   |
| LOC | 39  | Depth Unknown  |
| LOC | 998 | Not applicable   |
| LOC | 999 | Other  |

| MCC |    | Material Composition Category |
|-----|----|-------------------------------|
| MCC | 0  | Unknown                       |
| MCC | 4  | Ash                           |
| MCC | 5  | Asphalt                       |
| MCC | 6  | Basalt                        |
| MCC | 7  | Bedrock                       |
| MCC | 8  | Boulders                      |
| MCC | 9  | Brick                         |
| MCC | 10 | Calcareous                    |
| MCC | 11 | Cement                        |
| MCC | 12 | Chalk                         |

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 13 | Chemical                       |
| MCC | 14 | Cinders                        |
| MCC | 15 | Cirripedia                     |
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |
| MCC | 66 | Mussels                        |
| MCC | 67 | Oil                            |
| MCC | 68 | Oil Blister                    |
| MCC | 69 | Ooze                           |
| MCC | 70 | Oysters                        |



|     |     |                      |
|-----|-----|----------------------|
| MCC | 71  | Paper                |
| MCC | 72  | Part Metal           |
| MCC | 73  | Pebbles              |
| MCC | 74  | Plastic              |
| MCC | 75  | Polyzoa              |
| MCC | 76  | Porphyry             |
| MCC | 77  | Prestressed Concrete |
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |
| MCC | 999 | Other                |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

|     | Units   | Format         | Range                                  | Increment | Max Char |
|-----|---|----------------|--|-----------|----------|
|     | Text String   | Lexical        |  |           | 80       |
| OHC | Overhead Clearance Category<br>The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)                                      |                |  |           |          |
|     | OHC   | 0              | Actual Value                           |           |          |
|     | Units   | Format         | Range                                  | Increment | Max Char |
|     | Meters  | Floating Point |  | 0.1 M     |          |
| OWO | Over Water Obstruction<br>Indicates the presence of an obstruction over an area of navigable water.   |                |  |           |          |
|     | OWO   | 1              | Feature crosses navigable water        |           |          |
|     | OWO   | 2              | Feature does not cross navigable water |           |          |
| PHT | Predominant Height<br>Height of 51% or more of the feature. If not obtainable, then the average height of the feature will be used.   |                |  |           |          |
|     | PHT   | 0              | Actual Value                           |           |          |
|     | Units   | Format         | Range                                  | Increment | Max Char |
|     | Meters  | Short Integer  | 0±32,767                               | 1 M       |          |
| PRC | Periodic Restriction Category   |                |  |           |          |
|     | PRC   | 1              | Perennially Open, Not Subject to Ice   |           |          |
|     | PRC   | 2              | Subject to Ice                         |           |          |
|     | PRC   | 3              | Permanent Ice                          |           |          |
|     | PRC   | 4              | Seasonal limit - Jan.                  |           |          |
|     | PRC   | 5              | Seasonal limit - Feb.                  |           |          |
|     | PRC   | 6              | Seasonal limit - Mar.                  |           |          |
|     | PRC   | 7              | Seasonal limit - Apr.                  |           |          |
|     | PRC   | 8              | Seasonal limit - May                   |           |          |
|     | PRC   | 9              | Seasonal limit - Jun.                  |           |          |
|     | PRC   | 10             | Seasonal limit - Jul.                  |           |          |
|     | PRC   | 11             | Seasonal limit - Aug.                  |           |          |
|     | PRC   | 12             | Seasonal limit - Sep.                  |           |          |
|     | PRC   | 13             | Seasonal limit - Oct.                  |           |          |
|     | PRC   | 14             | Seasonal limit - Nov.                  |           |          |
|     | PRC   | 15             | Seasonal limit - Dec.                  |           |          |
|     | PRC   | 16             | Closed                                 |           |          |
|     | PRC   | 999            | Other                                  |           |          |
| RPA | Required Port Access<br>An indicator that a water feature is used for access to a required port, or that the feature is in a water body used for access to a required port. |                |  |           |          |
|     | RPA   | 1              | Access Required                        |           |          |
|     | RPA   | 2              | Access Not Required                    |           |          |
| SCC | Spring/Well Characteristic Category<br>Type of available water.   |                |  |           |          |
|     | SCC   | 0              | Unknown                                |           |          |
|     | SCC   | 1              | Alkaline                               |           |          |
|     | SCC   | 2              | Not Applicable                         |           |          |

|     |     |                                |
|-----|-----|--------------------------------|
| SCC | 3   | VALUE INTENTIONALLY LEFT BLANK |
| SCC | 4   | Mineral                        |
| SCC | 5   | VALUE INTENTIONALLY LEFT BLANK |
| SCC | 6   | VALUE INTENTIONALLY LEFT BLANK |
| SCC | 9   | Freshwater /Potable            |
| SCC | 10  | Salt                           |
| SCC | 11  | Fresh                          |
| SCC | 999 | Other                          |

SDS Stem Diameter Size  
The average diameter of trees in a stand, measured at a height of 1.4 m above the ground.

SDS 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 Meter   |          |

SLT Shoreline Type

|     |    |                |
|-----|----|----------------|
| SLT | 0  | Unknown        |
| SLT | 6  | Mangrove/Nipa  |
| SLT | 8  | Marsh, Swamp   |
| SLT | 10 | Rocky          |
| SLT | 11 | Rubble         |
| SLT | 14 | Stony, Shingly |
| SLT | 15 | Other          |

TID Tidal/Non-Tidal Category

|     |   |                           |
|-----|---|---------------------------|
| TID | 1 | Non-Tidal                 |
| TID | 2 | Tidal / Tidal fluctuating |

TSC Tree Spacing Category

Average distance between adjacent tree centerlines within area of feature.

TSC 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

TXT Text Attribute

Narrative or other description.

TXT 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

USE Usage

Use (identifies the primary user, function, or controlling authority).

|     |   |                                |
|-----|---|--------------------------------|
| USE | 0 | Unknown                        |
| USE | 1 | VALUE INTENTIONALLY LEFT BLANK |
| USE | 2 | VALUE INTENTIONALLY LEFT BLANK |
| USE | 3 | VALUE INTENTIONALLY LEFT BLANK |
| USE | 4 | National                       |
| USE | 5 | State                          |
| USE | 6 | Private                        |
| USE | 7 | Tribal                         |

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 8  | Military                           |
| USE | 9  | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |

|     |     |   |
|-----|-----|---|
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

# VEG

## Vegetation Characteristics

### Type of plant or plantings.

|     |    |  |
|-----|----|--|
| VEG | 0  | Unknown  |
| VEG | 1  | Dry Crops  |
| VEG | 2  | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 3  | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 4  | Rice Paddies                                       |
| VEG | 5  | Agriculture with scattered forests or rows of tree |
| VEG | 6  | Cranberry  |
| VEG | 7  | Peat   |
| VEG | 8  | Pasture, meadow, steppe                            |
| VEG | 9  | Grassland with scattered trees                     |
| VEG | 10 | Tropical Grass                                     |
| VEG | 11 | Casuarina  |
| VEG | 12 | Coniferous   |
| VEG | 16 | Nipa Palm  |
| VEG | 17 | Palm   |
| VEG | 18 | Filao  |
| VEG | 19 | Mangrove   |
| VEG | 20 | Grove  |
| VEG | 22 | Wheat  |
| VEG | 23 | Corn   |
| VEG | 24 | Deciduous  |
| VEG | 25 | Evergreen  |
| VEG | 26 | Cork-Oak   |
| VEG | 27 | Fir  |
| VEG | 28 | Beech  |
| VEG | 29 | Eucalyptus   |
| VEG | 30 | Oak  |
| VEG | 31 | Pine   |
| VEG | 32 | Walnut   |
| VEG | 33 | Maple  |
| VEG | 34 | Poplar   |
| VEG | 35 | Olive  |
| VEG | 36 | Chestnut   |
| VEG | 37 | Larch  |
| VEG | 38 | Cypress  |
| VEG | 39 | Peach  |
| VEG | 40 | Apple  |
| VEG | 41 | Carob  |
| VEG | 42 | Almond   |
| VEG | 43 | Citrus   |
| VEG | 44 | Elm  |
| VEG | 45 | Ilex   |
| VEG | 46 | Birch  |
| VEG | 47 | Ash  |
| VEG | 48 | Hazel  |

|     |     |                                   |
|-----|-----|-----------------------------------|
| VEG | 49  | VALUE INTENTIONALLY LEFT BLANK    |
| VEG | 49  | Mixed Deciduous                   |
| VEG | 50  | Mixed Trees                       |
| VEG | 51  | Herb/Shrub                        |
| VEG | 52  | Forest Clearing                   |
| VEG | 53  | Brushland open to medium density  |
| VEG | 54  | Brushland medium to dense density |
| VEG | 55  | With trees                        |
| VEG | 56  | Without trees                     |
| VEG | 999 | Other                             |

#### VRC

##### Vegetation Roughness Category

An indexed value indicating the roughness of vegetation.

|     |    |  |
|-----|----|--|
| VRC | 1  | 0.00 100% reduction  |
| VRC | 2  | 0.05   |
| VRC | 3  | 0.10   |
| VRC | 4  | 0.15   |
| VRC | 5  | 0.20   |
| VRC | 6  | 0.25   |
| VRC | 7  | 0.30   |
| VRC | 8  | 0.35   |
| VRC | 9  | 0.40   |
| VRC | 10 | 0.45   |
| VRC | 11 | 0.50 50% reduction.  |
| VRC | 12 | 0.55   |
| VRC | 13 | 0.60   |
| VRC | 14 | 0.65   |
| VRC | 15 | 0.70   |
| VRC | 16 | 0.75   |
| VRC | 17 | 0.80   |
| VRC | 18 | 0.85   |
| VRC | 19 | 0.90   |
| VRC | 20 | 0.95   |
| VRC | 21 | 1.00 0% reduction.   |
| VRC | 22 | Not evaluated area where development has precluded evaluation of soil. |
| VRC | 23 | NA   |

#### VRR

##### Vertical Reference Category

Relative location referenced to sounding datum, unless otherwise indicated.

|     |   |  |
|-----|---|--|
| VRR | 0 | Unknown                                      |
| VRR | 1 | Above Surface/Does not cover (At High Water) |
| VRR | 2 | Awash at Sounding Datum                      |
| VRR | 4 | Below Surface/Submerged                      |
| VRR | 8 | Covers and Uncovers                          |
| VRR | 9 | Not Applicable                               |

#### WD3

##### Military Gap Width

The minimum horizontal bridging distance between banks (in decimeters).

|     |   |              |
|-----|---|--------------|
| WD3 | 0 | Actual Value |
|-----|---|--------------|

| Units      | Format        | Range    | Increment | Max Char |
|------------|---------------|----------|-----------|----------|
| Decimeters | Short Integer | 0±32,767 | 1 DM      |          |

|     |  |               |                |                  |                 |
|-----|--|---------------|----------------|------------------|-----------------|
| WDA | Water Depth Average<br>The average water depth (in meters).  |               |                |                  |                 |
|     | WDA 0  | Actual Value  |                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|     | Meters   | Short Integer | 0±32,767       | 1 M              |                 |
| WVA | Water Velocity Average<br>Average water velocity, estimated in meters/second within delineation of feature exclusive of high water due to runoff or low water due to drought.  |               |                |                  |                 |
|     | WVA 0  | Actual Value  |                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|     | Meters/Sec.  | Short Integer | 0±32,767       | 1 M/S            |                 |
| WID | Width<br>A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments. |               |                |                  |                 |
|     | WID 0  | Actual Value  |                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|     | Meters   | Short Integer | 0±32,767       | 1 M              |                 |
| ZV2 | Highest Z-Value<br>Elevation above a given datum to the highest portion of the feature.  |               |                |                  |                 |
|     | ZV2 0  | Actual Value  |                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|     | Meters   | Short Integer | -400 to 30,000 | 1 M              |                 |

#### Inland Routes, Shorelines, and Related Land Feature Class

ID

F-CODE/DESCRIPTION

|       |  |
|-------|--|
| BH040 | Filtration Beds/Aeration Beds<br>An area containing layers of material used to filter or aerate water. |
| BH070 | Ford<br>A shallow place in a body of water used as a crossing.   |
| BH090 | Land Subject to Inundation<br>An area periodically covered by flood water, excluding tidal waters.     |
| BH091 | Flooded Area<br>Land subject to controlled inundation.   |
| BH135 | Rice Field<br>An area periodically covered with water and used for growing rice.                       |
| BH141 | River Bank<br>The limit line between the water area of a river and the area of land.                   |
| BH145 | River Stream Vanishing Point<br>Point at which a river or stream passes into the ground.               |
| BH200 | Miscellaneous Surface Drainage Feature   |



Surface drainage feature which is of a minor nature and which is not included in other feature codings in this specification.

**BH210 Inland Shoreline**

The land-water boundary for all inland hydrographic features having shorelines, Lake/Pond or Island, except for left and right banks of River/Stream and Canal.

**BH501 River Navigation Route**

The route in a river suitable for the largest allowed vessels.

**ACC**

**Accuracy Category**

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

**AOO**

**Angle of Orientation**

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|     |   |              |
|-----|---|--------------|
| AOO | 0 | Actual Value |
|-----|---|--------------|

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

**ARA**

**Area Coverage Attribute**

The absolute area within the delineation of the feature.

|     |   |              |
|-----|---|--------------|
| ARA | 0 | Actual Value |
|-----|---|--------------|

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

**COC**

**Conspicuous Category**

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

|     |  |                         |
|-----|--|-------------------------|
| EXS | Existence Category                     |                         |
|     | The state or condition of the feature. |                         |
| EXS | 0                                      | Unknown                 |
| EXS | 1                                      | Definite                |
| EXS | 2                                      | Doubtful                |
| EXS | 3                                      | Reported                |
| EXS | 5                                      | Under Construction      |
| EXS | 6                                      | Abandoned/Disused       |
| EXS | 7                                      | Destroyed               |
| EXS | 10                                     | Proposed                |
| EXS | 11                                     | Temporary               |
| EXS | 12                                     | Alternate               |
| EXS | 18                                     | Permanent               |
| EXS | 25                                     | Not Maintained          |
| EXS | 26                                     | Maintained              |
| EXS | 27                                     | Closed/Locked           |
| EXS | 28                                     | Operational             |
| EXS | 30                                     | Not Isolated            |
| EXS | 31                                     | Isolated                |
| EXS | 33                                     | Ruined                  |
| EXS | 35                                     | Other                   |
| EXS | 44                                     | Approximate/About       |
| EXS | 45                                     | Natural                 |
| EXS | 46                                     | Man-made                |
| EXS | 47                                     | Swept                   |
| EXS | 48                                     | Controlled              |
| EXS | 49                                     | Non-Controlled          |
| EXS | 50                                     | Non-Tidal               |
| EXS | 51                                     | Tidal/Tidal Fluctuation |
| EXS | 52                                     | Dissipating             |
| EXS | 53                                     | Incomplete              |
| EXS | 54                                     | Antique/Ancient         |
| EXS | 55                                     | Unexamined/Unsurveyed   |
| EXS | 56                                     | Unattended/Unwatched    |
| EXS | 59                                     | Not Usable              |
| EXS | 60                                     | Indefinite (Shoreline)  |
| EXS | 61                                     | Definite Shoreline      |
| EXS | 62                                     | Partially Destroyed     |
| EXS | 65                                     | Inactive                |
| EXS | 998                                    | Not Applicable          |
| EXS | 999                                    | Other                   |

|     |                       |                          |
|-----|-----------------------|--------------------------|
| FCO | Feature Configuration |                          |
|     |                       |                          |
| FCO | 0                     | Unknown                  |
| FCO | 1                     | Dispersed                |
| FCO | 2                     | Multiple                 |
| FCO | 3                     | Single                   |
| FCO | 4                     | Inclined                 |
| FCO | 5                     | Divided same widths      |
| FCO | 6                     | Divided different widths |
| FCO | 7                     | Non-divided              |
| FCO | 8                     | Poorly defined           |
| FCO | 9                     | Well-defined             |
| FCO | 11                    | Double                   |

FCO 12 Justaxposition  
FCO 999 Other

FTC Farming Type Category  
Type of field pattern

|     |     |                                    |
|-----|-----|------------------------------------|
| FTC | 0   | Unknown                            |
| FTC | 1   | Slash & Burn-Shifting cultivation  |
| FTC | 2   | Permanent field                    |
| FTC | 3   | Terraced                           |
| FTC | 4   | Ditch Irrigation                   |
| FTC | 5   | Grazing                            |
| FTC | 6   | Regular (planting pattern)         |
| FTC | 7   | Linear (planting pattern)          |
| FTC | 8   | Shifting Cultivation/Crop Rotation |
| FTC | 9   | Not Applicable                     |
| FTC | 98  | Type of field Pattern              |
| FTC | 999 | Other                              |

HFC Hydrological Form Category  
Form or configuration of the hydrological feature.

|     |     |                                     |
|-----|-----|-------------------------------------|
| HFC | 0   | Unknown                             |
| HFC | 1   | Channelized Stream                  |
| HFC | 2   | Disappearing                        |
| HFC | 7   | Non-Tidal                           |
| HFC | 8   | Normal Channel                      |
| HFC | 10  | Tidal /Tidal Fluctuating            |
| HFC | 14  | Braided                             |
| HFC | 16  | Dissipating                         |
| HFC | 19  | Gorge                               |
| HFC | 21  | Wadi/Wash                           |
| HFC | 30  | Disappearing in sinkhole            |
| HFC | 31  | Disappearing in other than sinkhole |
| HFC | 32  | Oxbow                               |
| HFC | 33  | Split stream                        |
| HFC | 999 | Other                               |

HGT Height Above Surface Level  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

HOC Hydrographic Origin Category  
Origin of the feature.

|     |   |            |
|-----|---|------------|
| HOC | 1 | Controlled |
| HOC | 4 | Man-made   |
| HOC | 5 | Natural    |

LEN Length  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

MCC

Material Composition Category

|        |                                |
|--------|--------------------------------|
| MCC 0  | Unknown                        |
| MCC 4  | Ash                            |
| MCC 5  | Asphalt                        |
| MCC 6  | Basalt                         |
| MCC 7  | Bedrock                        |
| MCC 8  | Boulders                       |
| MCC 9  | Brick                          |
| MCC 10 | Calcareous                     |
| MCC 11 | Cement                         |
| MCC 12 | Chalk                          |
| MCC 13 | Chemical                       |
| MCC 14 | Cinders                        |
| MCC 15 | Cirripedia                     |
| MCC 16 | Clay                           |
| MCC 17 | Coal                           |
| MCC 18 | Cobble                         |
| MCC 19 | Coke                           |
| MCC 20 | Composition                    |
| MCC 21 | Concrete                       |
| MCC 22 | Conglomerate                   |
| MCC 23 | Copper                         |
| MCC 24 | Coral                          |
| MCC 25 | Coral Head                     |
| MCC 26 | Desalinated Water              |
| MCC 27 | Diamonds                       |
| MCC 28 | Diatoms                        |
| MCC 29 | Dolomite                       |
| MCC 30 | Earthen                        |
| MCC 32 | Eroded Lands                   |
| MCC 34 | Flynch                         |
| MCC 35 | Food                           |
| MCC 36 | Foraminifera                   |
| MCC 37 | Fucus                          |
| MCC 40 | Glass                          |
| MCC 41 | Globigerina                    |
| MCC 42 | Gold                           |
| MCC 43 | Granite                        |
| MCC 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC 45 | Grass/Thatch                   |
| MCC 46 | Gravel                         |
| MCC 47 | Green Rocks                    |
| MCC 48 | Ground                         |
| MCC 49 | Ground (Shells)                |
| MCC 50 | Heat                           |
| MCC 51 | Iron                           |
| MCC 52 | Lava                           |
| MCC 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC 54 | Lead                           |

|     |     |                       |
|-----|-----|-----------------------|
| MCC | 55  | Loess                 |
| MCC | 56  | Lumber                |
| MCC | 57  | Macadam               |
| MCC | 58  | Madrepores            |
| MCC | 59  | Manganese             |
| MCC | 60  | Marble                |
| MCC | 61  | Marl                  |
| MCC | 62  | Masonry (Brick/Stone) |
| MCC | 63  | Mattes                |
| MCC | 64  | Metal                 |
| MCC | 65  | Mud                   |
| MCC | 66  | Mussels               |
| MCC | 67  | Oil                   |
| MCC | 68  | Oil Blister           |
| MCC | 69  | Ooze                  |
| MCC | 70  | Oysters               |
| MCC | 71  | Paper                 |
| MCC | 72  | Part Metal            |
| MCC | 73  | Pebbles               |
| MCC | 74  | Plastic               |
| MCC | 75  | Polyzoa               |
| MCC | 76  | Porphyry              |
| MCC | 77  | Prestressed Concrete  |
| MCC | 78  | Pteropods             |
| MCC | 79  | Pumice                |
| MCC | 80  | Quartz                |
| MCC | 81  | Radiolaria            |
| MCC | 82  | Radioactive Material  |
| MCC | 83  | Reinforced Concrete   |
| MCC | 84  | Rock/Rocky            |
| MCC | 85  | Rubber                |
| MCC | 86  | Rubble                |
| MCC | 87  | Salt                  |
| MCC | 88  | Sand                  |
| MCC | 89  | Sandstone             |
| MCC | 90  | Schist                |
| MCC | 91  | Spoils/Tailings       |
| MCC | 92  | Scoria                |
| MCC | 93  | Sea Tangle            |
| MCC | 94  | Seaweed               |
| MCC | 95  | Sewage                |
| MCC | 96  | Shells                |
| MCC | 98  | Shingle               |
| MCC | 99  | Silt                  |
| MCC | 100 | Silver                |
| MCC | 101 | Slag                  |
| MCC | 102 | Sludge                |
| MCC | 103 | Snow/Ice              |
| MCC | 104 | Soil                  |
| MCC | 105 | Spicules              |
| MCC | 106 | Sponge                |
| MCC | 107 | Steel                 |
| MCC | 108 | Stone                 |
| MCC | 109 | Sugar                 |

|     |     |                     |
|-----|-----|---------------------|
| MCC | 110 | Travertin           |
| MCC | 111 | Tufa                |
| MCC | 112 | Uranium             |
| MCC | 113 | Vegetation Products |
| MCC | 114 | Volcanic            |
| MCC | 115 | Volcanic Ash        |
| MCC | 116 | Water               |
| MCC | 117 | Wood                |
| MCC | 118 | Zinc                |
| MCC | 119 | Evaporites          |
| MCC | 999 | Other               |

**NAM**      **Name**  
Any Identifier or code.  
NAM    0      Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

**OHC**      **Overhead Clearance Category**  
The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)  
OHC    0      Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

**RST**      **Roadway/Runway Surface Type**  
The physical surface composition of a road.

|     |     |                  |
|-----|-----|------------------|
| RST | 0   | Unknown          |
| RST | 1   | Hard /Paved      |
| RST | 2   | Loose /Unpaved   |
| RST | 3   | Loose /Light     |
| RST | 4   | Corduroy         |
| RST | 5   | Grass/Sod (Soft) |
| RST | 6   | Natural          |
| RST | 7   | Permanent        |
| RST | 8   | Temporary        |
| RST | 998 | Not Applicable   |
| RST | 999 | Other            |

**SLT**      **Shoreline Type**

|     |    |                |
|-----|----|----------------|
| SLT | 0  | Unknown        |
| SLT | 6  | Mangrove/Nipa  |
| SLT | 8  | Marsh, Swamp   |
| SLT | 10 | Rocky          |
| SLT | 11 | Rubble         |
| SLT | 14 | Stony, Shingly |
| SLT | 15 | Other          |

**VEG**      **Vegetation Characteristics**  
Type of plant or plantings.

|     |   |           |
|-----|---|-----------|
| VEG | 0 | Unknown   |
| VEG | 1 | Dry Crops |

|     |     |  |
|-----|-----|--|
| VEG | 2   | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 3   | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 4   | Rice Paddies                                       |
| VEG | 5   | Agriculture with scattered forests or rows of tree |
| VEG | 6   | Cranberry  |
| VEG | 7   | Peat   |
| VEG | 8   | Pasture, meadow, steppe                            |
| VEG | 9   | Grassland with scattered trees                     |
| VEG | 10  | Tropical Grass                                     |
| VEG | 11  | Casuarina  |
| VEG | 12  | Coniferous   |
| VEG | 16  | Nipa Palm  |
| VEG | 17  | Palm   |
| VEG | 18  | Filao  |
| VEG | 19  | Mangrove   |
| VEG | 20  | Grove  |
| VEG | 22  | Wheat  |
| VEG | 23  | Corn   |
| VEG | 24  | Deciduous  |
| VEG | 25  | Evergreen  |
| VEG | 26  | Cork-Oak   |
| VEG | 27  | Fir  |
| VEG | 28  | Beech  |
| VEG | 29  | Eucalyptus   |
| VEG | 30  | Oak  |
| VEG | 31  | Pine   |
| VEG | 32  | Walnut   |
| VEG | 33  | Maple  |
| VEG | 34  | Poplar   |
| VEG | 35  | Olive  |
| VEG | 36  | Chestnut   |
| VEG | 37  | Larch  |
| VEG | 38  | Cypress  |
| VEG | 39  | Peach  |
| VEG | 40  | Apple  |
| VEG | 41  | Carob  |
| VEG | 42  | Almond   |
| VEG | 43  | Citrus   |
| VEG | 44  | Elm  |
| VEG | 45  | Ilex   |
| VEG | 46  | Birch  |
| VEG | 47  | Ash  |
| VEG | 48  | Hazel  |
| VEG | 49  | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 49  | Mixed Deciduous                                    |
| VEG | 50  | Mixed Trees  |
| VEG | 51  | Herb/Shrub   |
| VEG | 52  | Forest Clearing                                    |
| VEG | 53  | Brushland open to medium density                   |
| VEG | 54  | Brushland medium to dense density                  |
| VEG | 55  | With trees   |
| VEG | 56  | Without trees                                      |
| VEG | 999 | Other  |

|     |  |  |
|-----|--|--|
| VRC | Vegetation Roughness Category                            |  |
|     | An indexed value indicating the roughness of vegetation. |  |
|     | VRC 1  | 0.00 100% reduction  |
|     | VRC 2  | 0.05   |
|     | VRC 3  | 0.10   |
|     | VRC 4  | 0.15   |
|     | VRC 5  | 0.20   |
|     | VRC 6  | 0.25   |
|     | VRC 7  | 0.30   |
|     | VRC 8  | 0.35   |
|     | VRC 9  | 0.40   |
|     | VRC 10   | 0.45   |
|     | VRC 11   | 0.50 50% reduction.  |
|     | VRC 12   | 0.55   |
|     | VRC 13   | 0.60   |
|     | VRC 14   | 0.65   |
|     | VRC 15   | 0.70   |
|     | VRC 16   | 0.75   |
|     | VRC 17   | 0.80   |
|     | VRC 18   | 0.85   |
|     | VRC 19   | 0.90   |
|     | VRC 20   | 0.95   |
|     | VRC 21   | 1.00 0% reduction.   |
|     | VRC 22   | Not evaluated area where development has precluded evaluation of soil. |
|     | VRC 23   | NA   |

**WD1** Minimum Traveled Way Width  
Minimum width of the traveled way, excluding hard pavements and shoulders (in decimeters).

WD1 0 Actual Value

| Units      | Format        | Range | Increment | Max Char |
|------------|---------------|-------|-----------|----------|
| Decimeters | Short Integer |       | 0±32,767  | 1 DM     |

**WD5** Width Top  
The width at the top of a feature (in meters).

WD5 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**WID** Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |



## Water Flow Regulation Feature Class

ID

### F-CODE/DESCRIPTION

- BI020 Dam/Weir  
A permanent barrier across a watercourse used to impound water or to control its flow.
- BI030 Lock  
An enclosure with a pair or series of gates used for raising or lowering vessels as they pass from one water level to another.
- BI039 Sluice  
An open, inclined conduit fitted with a gate for regulating water flow and may be employed in mine ore washing operations.
- BI040 Sluice gate  
Gate used to regulate water flow.
- BI041 Gate (Nautical)  
A structure that may be swung, drawn, or lowered to block an entrance or passageway.
- BI042 Caisson  
The gate at the end of a drydock which excludes the water after pumping out the dock. Pumping engines are often located in the caisson.
- BI043 Flood Barrage  
An artificial obstruction placed in a water course to increase depth or to divert it.
- BI070 Gauging Station  
A device which monitors stream flow.

ACC

Accuracy Category  
Accuracy of geographic position.

- ACC 0 Unknown  
ACC 1 Accurate  
ACC 2 Approximate  
ACC 3 Doubtful  
ACC 5 Disputed  
ACC 6 Undisputed  
ACC 7 Precise  
ACC 8 Abrogated

AOO

Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

- AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

ARR

Angle of Radar Reflector

If DIR = 3 then ARR is the angular distance measured from true north (0 deg) clockwise to the reflective side of the feature.

- ARR 0 Actual Value

|     | <u>Units</u>        | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|-----|---------------------|---------------|--------------------------------|------------------|-----------------|
|     | Degrees             | Short Integer | 0-360                          | 1 DEG            |                 |
| ATN | Aids to Navigation  |               |                                |                  |                 |
|     | ATN                 | 0             | Unknown                        |                  |                 |
|     | ATN                 | 1             | Marked                         |                  |                 |
|     | ATN                 | 2             | Unmarked                       |                  |                 |
|     | ATN                 | 3             | Lit                            |                  |                 |
|     | ATN                 | 4             | Unlit                          |                  |                 |
|     | ATN                 | 999           | Other                          |                  |                 |
| CCC | Color Code Category |               |                                |                  |                 |
|     | CCC                 | 0             | Unknown                        |                  |                 |
|     | CCC                 | 1             | Black                          |                  |                 |
|     | CCC                 | 2             | Blue                           |                  |                 |
|     | CCC                 | 3             | Brown                          |                  |                 |
|     | CCC                 | 4             | Gray                           |                  |                 |
|     | CCC                 | 5             | Green                          |                  |                 |
|     | CCC                 | 7             | Chocolate                      |                  |                 |
|     | CCC                 | 8             | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | CCC                 | 9             | Orange                         |                  |                 |
|     | CCC                 | 10            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | CCC                 | 11            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | CCC                 | 12            | Red                            |                  |                 |
|     | CCC                 | 13            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | CCC                 | 14            | Violet                         |                  |                 |
|     | CCC                 | 15            | White                          |                  |                 |
|     | CCC                 | 16            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | CCC                 | 17            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | CCC                 | 18            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | CCC                 | 19            | Yellow                         |                  |                 |
|     | CCC                 | 20            | Red & White (RW)               |                  |                 |
|     | CCC                 | 21            | Red & Green (RG)               |                  |                 |
|     | CCC                 | 22            | Red & Black (RB)               |                  |                 |
|     | CCC                 | 23            | Red-Green-Red (RGR)            |                  |                 |
|     | CCC                 | 24            | Green & White (GW)             |                  |                 |
|     | CCC                 | 25            | Green & Red (GR)               |                  |                 |
|     | CCC                 | 26            | Green & Black (GB)             |                  |                 |
|     | CCC                 | 27            | Green-Red-Green (GRG)          |                  |                 |
|     | CCC                 | 28            | Green-Yellow-Black (GYB)       |                  |                 |
|     | CCC                 | 29            | Yellow & Black (YB)            |                  |                 |
|     | CCC                 | 30            | Yellow-Black-Yellow (YBY)      |                  |                 |
|     | CCC                 | 31            | Yellow & Red (YR)              |                  |                 |
|     | CCC                 | 32            | Yellow & Green (YG)            |                  |                 |
|     | CCC                 | 33            | Yellow-Red-White (YRW)         |                  |                 |
|     | CCC                 | 34            | Black & Yellow (BY)            |                  |                 |
|     | CCC                 | 35            | Black-Yellow-Black (BYB)       |                  |                 |
|     | CCC                 | 36            | Black-Red-Black (BRB)          |                  |                 |
|     | CCC                 | 37            | Black & White (BW)             |                  |                 |
|     | CCC                 | 38            | Black & Red (BR)               |                  |                 |
|     | CCC                 | 39            | Black & Green (BG)             |                  |                 |
|     | CCC                 | 40            | White & Red (WR)               |                  |                 |
|     | CCC                 | 41            | White & Orange (W Or)          |                  |                 |

|     |   |     |                                |
|-----|---|-----|--------------------------------|
|     | CCC   | 42  | White & Green (WG)             |
|     | CCC   | 43  | White & Black (WB)             |
|     | CCC   | 44  | White & Yellow (WY)            |
|     | CCC   | 45  | White-Red-Green (WRG)          |
|     | CCC   | 46  | White-Green-White (WGW)        |
|     | CCC   | 47  | Magenta                        |
|     | CCC   | 48  | Amber                          |
|     | CCC   | 49  | Buff                           |
|     | CCC   | 50  | Nautical Purple                |
|     | CCC   | 999 | Other                          |
| CIC | Color Intensity Category<br>Identifies the intensity of color.  |     |                                |
|     | CIC   | 0   | Unknown                        |
|     | CIC   | 1   | Dark                           |
|     | CIC   | 2   | Light                          |
|     | CIC   | 999 | Other                          |
| COC | Conspicuous Category<br>A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |     |                                |
|     | COC   | 0   | Unknown                        |
|     | COC   | 1   | Conspicuous from sea           |
|     | COC   | 2   | VALUE INTENTIONALLY LEFT BLANK |
|     | COC   | 3   | Radar Conspicuous from sea     |
|     | COC   | 4   | Conspicuous from land          |
|     | COC   | 5   | Conspicuous from air           |
|     | COC   | 6   | Inconspicuous                  |
|     | COC   | 7   | Generally Conspicuous          |
|     | COC   | 8   | Not visual conspicuous         |
|     | COC   | 9   | Visual conspicuous             |
|     | COC   | 10  | Not radar conspicuous          |
|     | COC   | 999 | Other                          |
| DIR | Directivity<br>The side or sides of a feature which produces the greatest reflectivity potential.   |     |                                |
|     | DIR   | 0   | Unknown                        |
|     | DIR   | 1   | Uni                            |
|     | DIR   | 2   | Bi                             |
|     | DIR   | 3   | Omni                           |
|     | DIR   | 999 | Other                          |
| EXS | Existence Category<br>The state or condition of the feature.  |     |                                |
|     | EXS   | 0   | Unknown                        |
|     | EXS   | 1   | Definite                       |
|     | EXS   | 2   | Doubtful                       |
|     | EXS   | 3   | Reported                       |
|     | EXS   | 5   | Under Construction             |
|     | EXS   | 6   | Abandoned/Disused              |
|     | EXS   | 7   | Destroyed                      |
|     | EXS   | 10  | Proposed                       |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

|     |                                |                 |
|-----|--------------------------------|-----------------|
| GNC | Gate (Nautical) Classification |                 |
| GNC | 0                              | Undefined       |
| GNC | 1                              | Gate in general |
| GNC | 4                              | Lock gate       |

|     |   |              |
|-----|---|--------------|
| HGT | Height Above Surface Level  |              |
|     | Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature. |              |
| HGT | 0   | Actual Value |

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

|     |  |              |
|-----|--|--------------|
| HGU | Height 2/Depth 2                           |              |
|     | Height above water level on upstream side. |              |
| HGU | 0  | Actual Value |

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

|     |        |
|-----|--------|
| LEN | Length |
|-----|--------|

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

## LOC

### Location Category

Status of feature relative to surrounding area or water.

|         |   |
|---------|---|
| LOC 0   | Unknown   |
| LOC 1   | Above Surface/Does not Cover (Height Known)       |
| LOC 2   | Awash at Chart Datum                              |
| LOC 3   | Dries/Covers (Height Unknown)                     |
| LOC 4   | Below Surface /Submerged/Underground              |
| LOC 5   | Covered < 20 Meters                               |
| LOC 6   | Covered <sup>3</sup> 20 Meters but < 30 Meters    |
| LOC 7   | Covered > = 30 Meters                             |
| LOC 8   | On Ground Surface                                 |
| LOC 9   | Depth Known                                       |
| LOC 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC 11  | Depth Unknown But Safe to Depth Shown             |
| LOC 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC 13  | Hull Showing                                      |
| LOC 14  | Masts Showing                                     |
| LOC 15  | On Water Surface/Floating                         |
| LOC 16  | Partially Submerged                               |
| LOC 17  | Sunken/on sea bottom                              |
| LOC 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC 20  | Funnel Showing                                    |
| LOC 21  | Superstructure showing                            |
| LOC 22  | Off Shore   |
| LOC 23  | Below sea bottom                                  |
| LOC 24  | Suspended or elevated above sea bottom            |
| LOC 25  | Suspended/Elevation above Ground or Water Surface |
| LOC 28  | Masts and Funnel Showing                          |
| LOC 30  | Non-Floating                                      |
| LOC 31  | Elevated  |
| LOC 32  | Depressed   |
| LOC 33  | Not submerged                                     |
| LOC 34  | Inland  |
| LOC 35  | Overhead  |
| LOC 36  | Height Above Bottom                               |
| LOC 37  | Exact Position Known                              |
| LOC 38  | Exact Position Unknown                            |
| LOC 39  | Depth Unknown                                     |
| LOC 998 | Not applicable                                    |
| LOC 999 | Other   |

## MCC

### Material Composition Category

|       |         |
|-------|---------|
| MCC 0 | Unknown |
| MCC 4 | Ash     |
| MCC 5 | Asphalt |
| MCC 6 | Basalt  |

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 7  | Bedrock                        |
| MCC | 8  | Boulders                       |
| MCC | 9  | Brick                          |
| MCC | 10 | Calcareous                     |
| MCC | 11 | Cement                         |
| MCC | 12 | Chalk                          |
| MCC | 13 | Chemical                       |
| MCC | 14 | Cinders                        |
| MCC | 15 | Cirripedia                     |
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |

|     |     |                      |
|-----|-----|----------------------|
| MCC | 65  | Mud                  |
| MCC | 66  | Mussels              |
| MCC | 67  | Oil                  |
| MCC | 68  | Oil Blister          |
| MCC | 69  | Ooze                 |
| MCC | 70  | Oysters              |
| MCC | 71  | Paper                |
| MCC | 72  | Part Metal           |
| MCC | 73  | Pebbles              |
| MCC | 74  | Plastic              |
| MCC | 75  | Polyzoa              |
| MCC | 76  | Porphyry             |
| MCC | 77  | Prestressed Concrete |
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |

MCC 999 Other

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 80       |

TUC

Transportation Use Category

|     |     |                                |
|-----|-----|--------------------------------|
| TUC | 0   | Unknown                        |
| TUC | 1   | Both Road and Railroad         |
| TUC | 2   | Highway                        |
| TUC | 3   | Railroad                       |
| TUC | 4   | Road                           |
| TUC | 6   | Street                         |
| TUC | 7   | Through Routes                 |
| TUC | 8   | Air Traffic Control            |
| TUC | 12  | Marine                         |
| TUC | 13  | Air                            |
| TUC | 14  | Bus                            |
| TUC | 17  | Pedestrian                     |
| TUC | 18  | Pipeline                       |
| TUC | 19  | Animal                         |
| TUC | 20  | Aircraft                       |
| TUC | 21  | Ship                           |
| TUC | 22  | Automotive                     |
| TUC | 23  | Boat                           |
| TUC | 24  | Bulk Motor Boat/Barge          |
| TUC | 25  | VALUE INTENTIONALLY LEFT BLANK |
| TUC | 26  | Passenger                      |
| TUC | 27  | Chair lift                     |
| TUC | 28  | Ski tow                        |
| TUC | 29  | Sleigh tow                     |
| TUC | 30  | Cart tow                       |
| TUC | 31  | Motor Cycle                    |
| TUC | 32  | Bicycle                        |
| TUC | 33  | Minerals                       |
| TUC | 34  | Waterway                       |
| TUC | 35  | No Transport Use               |
| TUC | 36  | Slip Road/Access Road          |
| TUC | 37  | Portage                        |
| TUC | 38  | Canal                          |
| TUC | 39  | Caravan Route                  |
| TUC | 40  | Subway                         |
| TUC | 999 | Other                          |

TXT

Text Attribute

Narrative or other description.

TXT 0 Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |



| USE    | Usage  |
|--------|--|
|        | Use (identifies the primary user, function, or controlling authority). |
| USE 0  | Unknown  |
| USE 1  | VALUE INTENTIONALLY LEFT BLANK   |
| USE 2  | VALUE INTENTIONALLY LEFT BLANK   |
| USE 3  | VALUE INTENTIONALLY LEFT BLANK   |
| USE 4  | National   |
| USE 5  | State  |
| USE 6  | Private  |
| USE 7  | Tribal   |
| USE 8  | Military   |
| USE 9  | VALUE INTENTIONALLY LEFT BLANK   |
| USE 10 | Other  |
| USE 11 | Motel/Hotel  |
| USE 12 | Apartment  |
| USE 13 | Open   |
| USE 14 | VALUE INTENTIONALLY LEFT BLANK   |
| USE 15 | VALUE INTENTIONALLY LEFT BLANK   |
| USE 16 | City   |
| USE 17 | Advertising Billboard  |
| USE 18 | Scoreboard   |
| USE 19 | Highway Sign   |
| USE 20 | Closed   |
| USE 21 | Restricted   |
| USE 22 | Joint Military/Civilian  |
| USE 23 | International  |
| USE 24 | Unidentified Aircraft Landing Area                                     |
| USE 25 | Federal  |
| USE 26 | Primary/1st Order  |
| USE 30 | Secondary/2nd Order  |
| USE 31 | Tertiary/3rd Order   |
| USE 32 | Insular  |
| USE 33 | Provincial   |
| USE 37 | Interstate   |
| USE 41 | Industrial   |
| USE 42 | Commercial   |
| USE 43 | Institutional  |
| USE 44 | Residential  |
| USE 45 | Agricultural   |
| USE 48 | Decoy  |
| USE 49 | Civilian/Public  |
| USE 50 | Limited  |
| USE 51 | Telegraph  |
| USE 52 | Telephone  |
| USE 53 | Power  |
| USE 57 | Marine   |
| USE 60 | Avalanche  |
| USE 61 | Refugee  |
| USE 62 | Prisoner   |
| USE 68 | Animal sanctuary   |
| USE 69 | Levee/Dike   |
| USE 70 | Reserve/Reservation  |
| USE 73 | Terminus/Terminal  |
| USE 74 | Low Altitude enroute   |

|     |     |   |
|-----|-----|---|
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

WD5 Width Top  
The width at the top of a feature (in meters).

WD5 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

WID Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

ZV2 Highest Z-Value  
Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

## Water Containment Feature Class

ID

F-CODE/DESCRIPTION

|       |  |
|-------|--|
| BI010 | Cistern<br>Man-made container used for collection or storage of rain water.  |
| BI050 | Water Intake Tower<br>Tower-like structure associated with a dam or water source and used for the intake of water. |
| BI060 | Fish Ladder  |

Series of ascending pools constructed to enable fish to swim upstream around or over a dam.

# AOO

## Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |          |

# ATN

## Aids to Navigation

ATN 0 Unknown  
 ATN 1 Marked  
 ATN 2 Unmarked  
 ATN 3 Lit  
 ATN 4 Unlit  
 ATN 999 Other

# CCC

## Color Code Category

CCC 0 Unknown  
 CCC 1 Black  
 CCC 2 Blue  
 CCC 3 Brown  
 CCC 4 Gray  
 CCC 5 Green  
 CCC 7 Chocolate  
 CCC 8 VALUE INTENTIONALLY LEFT BLANK  
 CCC 9 Orange  
 CCC 10 VALUE INTENTIONALLY LEFT BLANK  
 CCC 11 VALUE INTENTIONALLY LEFT BLANK  
 CCC 12 Red  
 CCC 13 VALUE INTENTIONALLY LEFT BLANK  
 CCC 14 Violet  
 CCC 15 White  
 CCC 16 VALUE INTENTIONALLY LEFT BLANK  
 CCC 17 VALUE INTENTIONALLY LEFT BLANK  
 CCC 18 VALUE INTENTIONALLY LEFT BLANK  
 CCC 19 Yellow  
 CCC 20 Red & White (RW)  
 CCC 21 Red & Green (RG)  
 CCC 22 Red & Black (RB)  
 CCC 23 Red-Green-Red (RGR)  
 CCC 24 Green & White (GW)  
 CCC 25 Green & Red (GR)  
 CCC 26 Green & Black (GB)  
 CCC 27 Green-Red-Green (GRG)  
 CCC 28 Green-Yellow-Black (GYB)  
 CCC 29 Yellow & Black (YB)  
 CCC 30 Yellow-Black-Yellow (YBY)  
 CCC 31 Yellow & Red (YR)  
 CCC 32 Yellow & Green (YG)  
 CCC 33 Yellow-Red-White (YRW)

|     |     |                          |
|-----|-----|--------------------------|
| CCC | 34  | Black & Yellow (BY)      |
| CCC | 35  | Black-Yellow-Black (BYB) |
| CCC | 36  | Black-Red-Black (BRB)    |
| CCC | 37  | Black & White (BW)       |
| CCC | 38  | Black & Red (BR)         |
| CCC | 39  | Black & Green (BG)       |
| CCC | 40  | White & Red (WR)         |
| CCC | 41  | White & Orange (W Or)    |
| CCC | 42  | White & Green (WG)       |
| CCC | 43  | White & Black (WB)       |
| CCC | 44  | White & Yellow (WY)      |
| CCC | 45  | White-Red-Green (WRG)    |
| CCC | 46  | White-Green-White (WGW)  |
| CCC | 47  | Magenta                  |
| CCC | 48  | Amber                    |
| CCC | 49  | Buff                     |
| CCC | 50  | Nautical Purple          |
| CCC | 999 | Other                    |

**CIC**      **Color Intensity Category**  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

**COC**      **Conspicuous Category**  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

**DIR**      **Directivity**  
The side or sides of a feature which produces the greatest reflectivity potential.

|     |     |         |
|-----|-----|---------|
| DIR | 0   | Unknown |
| DIR | 1   | Uni     |
| DIR | 2   | Bi      |
| DIR | 3   | Omni    |
| DIR | 999 | Other   |

**EXS**      **Existence Category**  
The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

#### HGT

##### Height Above Surface Level

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

#### LEN

##### Length

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

# MCC

## Material Composition Category

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 0  | Unknown                        |
| MCC | 4  | Ash                            |
| MCC | 5  | Asphalt                        |
| MCC | 6  | Basalt                         |
| MCC | 7  | Bedrock                        |
| MCC | 8  | Boulders                       |
| MCC | 9  | Brick                          |
| MCC | 10 | Calcareous                     |
| MCC | 11 | Cement                         |
| MCC | 12 | Chalk                          |
| MCC | 13 | Chemical                       |
| MCC | 14 | Cinders                        |
| MCC | 15 | Cirripedia                     |
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |

|     |     |                       |
|-----|-----|-----------------------|
| MCC | 57  | Macadam               |
| MCC | 58  | Madrepores            |
| MCC | 59  | Manganese             |
| MCC | 60  | Marble                |
| MCC | 61  | Marl                  |
| MCC | 62  | Masonry (Brick/Stone) |
| MCC | 63  | Mattes                |
| MCC | 64  | Metal                 |
| MCC | 65  | Mud                   |
| MCC | 66  | Mussels               |
| MCC | 67  | Oil                   |
| MCC | 68  | Oil Blister           |
| MCC | 69  | Ooze                  |
| MCC | 70  | Oysters               |
| MCC | 71  | Paper                 |
| MCC | 72  | Part Metal            |
| MCC | 73  | Pebbles               |
| MCC | 74  | Plastic               |
| MCC | 75  | Polyzoa               |
| MCC | 76  | Porphyry              |
| MCC | 77  | Prestressed Concrete  |
| MCC | 78  | Pteropods             |
| MCC | 79  | Pumice                |
| MCC | 80  | Quartz                |
| MCC | 81  | Radiolaria            |
| MCC | 82  | Radioactive Material  |
| MCC | 83  | Reinforced Concrete   |
| MCC | 84  | Rock/Rocky            |
| MCC | 85  | Rubber                |
| MCC | 86  | Rubble                |
| MCC | 87  | Salt                  |
| MCC | 88  | Sand                  |
| MCC | 89  | Sandstone             |
| MCC | 90  | Schist                |
| MCC | 91  | Spoils/Tailings       |
| MCC | 92  | Scoria                |
| MCC | 93  | Sea Tangle            |
| MCC | 94  | Seaweed               |
| MCC | 95  | Sewage                |
| MCC | 96  | Shells                |
| MCC | 98  | Shingle               |
| MCC | 99  | Silt                  |
| MCC | 100 | Silver                |
| MCC | 101 | Slag                  |
| MCC | 102 | Sludge                |
| MCC | 103 | Snow/Ice              |
| MCC | 104 | Soil                  |
| MCC | 105 | Spicules              |
| MCC | 106 | Sponge                |
| MCC | 107 | Steel                 |
| MCC | 108 | Stone                 |
| MCC | 109 | Sugar                 |
| MCC | 110 | Travertin             |
| MCC | 111 | Tufa                  |



|     |     |                     |
|-----|-----|---------------------|
| MCC | 112 | Uranium             |
| MCC | 113 | Vegetation Products |
| MCC | 114 | Volcanic            |
| MCC | 115 | Volcanic Ash        |
| MCC | 116 | Water               |
| MCC | 117 | Wood                |
| MCC | 118 | Zinc                |
| MCC | 119 | Evaporites          |
| MCC | 999 | Other               |

**TXT**      Text Attribute  
 Narrative or other description.  
 TXT    0      Actual Value

| Units       | Format  | Range | Increment | Max Char |
|-------------|---------|-------|-----------|----------|
| Text String | Lexical |       |           | 256      |

**WD5**      Width Top  
 The width at the top of a feature (in meters).  
 WD5    0      Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**WID**      Width  
 A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. For a bridge, the width is the measurement perpendicular to the axis between the abutments.  
 WID    0      Actual Value

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0±32,767 | 1 M       |          |

**ZV2**      Highest Z-Value  
 Elevation above a given datum to the highest portion of the feature.  
 ZV2    0      Actual Value

| Units  | Format        | Range          | Increment | Max Char |
|--------|---------------|----------------|-----------|----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

#### Data Quality Feature Class

**ID**

**F-CODE/DESCRIPTION**

**ZD020**    Void Collection Area

**VCA**      Void Collection Attribute

|     |   |                            |
|-----|---|----------------------------|
| VCA | 0 | Unknown                    |
| VCA | 1 | Data Not Requested By User |
| VCA | 2 | Area Too Rough to Collect  |

|     |     |  |
|-----|-----|--|
| VCA | 3   | No Available Imagery                         |
| VCA | 4   | Different Height Threshold Within Data Block |
| VCA | 5   | Low Data Collection Criteria                 |
| VCA | 6   | No Available Map Source                      |
| VCA | 7   | No Suitable Imagery                          |
| VCA | 8   | Data Not Required                            |
| VCA | 999 | Other  |

|     |                      |         |
|-----|----------------------|---------|
| VCT | Void Collection Type |         |
| VCT | 0                    | Unknown |
| VCT | 1                    | Relief  |
| VCT | 2                    | Other   |

## Appendix G. Industry Coverage

### Extraction Feature Class ID

#### F-Code/Description

AA010 Mine  
AA012 Quarry  
AA013 Pit  
AA052 Oil/Gas Field  
AA050 Well

#### ABS

##### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

#### ACC

##### Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

#### AOO

##### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| AOO     | 0             | Actual Value |           |           |
|---------|---------------|--------------|-----------|-----------|
| Units   | Format        | Range        | Increment | Max Chars |
| Degrees | Short Integer | 0-360        | 1 DEG     |           |

#### ARA

##### Area Coverage Attribute

The absolute area within the delineation of the feature.

| ARA        | 0             | Actual Value |                  |          |
|------------|---------------|--------------|------------------|----------|
| Units      | Format        | Range        | Increment        | Max Char |
| Sq. Meters | Short Integer | 0±32,767     | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767     | 1 HA             |          |

#### ATN

##### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

|     |                     |                        |
|-----|---------------------|------------------------|
| CCC | Color Code Category |                        |
| CCC | 0                   | Unknown/Not applicable |
| CCC | 1                   | Black                  |
| CCC | 2                   | Blue                   |
| CCC | 3                   | Brown                  |
| CCC | 4                   | Gray                   |
| CCC | 5                   | Green                  |
| CCC | 7                   | Chocolate              |
| CCC | 9                   | Orange                 |
| CCC | 12                  | Red                    |
| CCC | 14                  | Violet                 |
| CCC | 15                  | White                  |
| CCC | 19                  | Yellow                 |
| CCC | 47                  | Magenta                |
| CCC | 48                  | Amber                  |
| CCC | 49                  | Buff                   |
| CCC | 51                  | Bluegreen              |
| CCC | 52                  | Bright Blue            |
| CCC | 53                  | Aqua                   |
| CCC | 55                  | Bright Green           |
| CCC | 58                  | Bright Yellow          |
| CCC | 61                  | Bright Red             |
| CCC | 63                  | Cyan                   |
| CCC | 64                  | Purple                 |
| CCC | 69                  | Pink                   |
| CCC | 70                  | Lavender               |
| CCC | 999                 | Other                  |

|     |                                    |         |
|-----|------------------------------------|---------|
| CIC | Color Intensity Category           |         |
|     | Identifies the intensity of color. |         |
| CIC | 0                                  | Unknown |
| CIC | 1                                  | Dark    |
| CIC | 2                                  | Light   |
| CIC | 999                                | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category  |                                |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

*DFR*      *Diffuse Reflectance*  
 Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

*DY1*      *Directivity*  
 Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

*DY2*      *Directivity (IR)*  
 Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

*DY3*      *Directivity (Radar)*  
 Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY*      *Emissivity*  
 Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI*      *Exitance*  
 Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS*      *Existence Category*  
 The state or condition of the feature.

|     |   |                    |
|-----|---|--------------------|
| EXS | 0 | Unknown            |
| EXS | 1 | Definite           |
| EXS | 2 | Doubtful           |
| EXS | 3 | Reported           |
| EXS | 5 | Under Construction |
| EXS | 6 | Abandoned/Disused  |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

**FOT** *Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

**HGT** *Height Above Surface Level*

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**HYC** *Hydrological Category*

Identifies the annual water content of the feature.

HYC 0 Unknown

HYC 2 Not Applicable

HYC 3 Dry

HYC 6 Non-Perennial /Intermittent /Fluctuating

HYC 8 Perennial /Permanent

HYC 999 Other

LEN

Length/Diameter of Point Feature

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN0Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

LLE

Low Level Effects

Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T

LLE F

LLL

Long Lineal

Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T

LLL F

LN1

Layer Number

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2

Layer Number (IR)

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

Layer Number (Radar)

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LOC

Location Category

Status of feature relative to surrounding area or water.

LOC0Unknown

LOC1Above Surface/Does not Cover (Height Known)

LOC2Awash at Chart Datum

LOC3Dries/Covers (Height Unknown)

LOC4Below Surface /Submerged/Underground

LOC5Covered < 20 Meters

|     |     |   |
|-----|-----|---|
| LOC | 6   | Covered $\geq$ 20 Meters but < 30 Meters          |
| LOC | 7   | Covered $\geq$ 30 Meters                          |
| LOC | 8   | On Ground Surface                                 |
| LOC | 9   | Depth Known                                       |
| LOC | 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11  | Depth Unknown But Safe to Depth Shown             |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13  | Hull Showing                                      |
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

#### MIN

#### Mining Category

Unique mining characteristic.

|     |     |                    |
|-----|-----|--------------------|
| MIN | 0   | Unknown            |
| MIN | 1   | Borrow             |
| MIN | 2   | Horizontal Shaft   |
| MIN | 3   | Open Pit           |
| MIN | 4   | Placer             |
| MIN | 5   | Prospect           |
| MIN | 6   | Strip              |
| MIN | 7   | Vertical Shaft     |
| MIN | 8   | Peat Cuttings      |
| MIN | 9   | Below Surface Mine |
| MIN | 998 | Not Applicable     |
| MIN | 999 | Other              |

#### NAM

#### Name

Any Identifier or code.

| NAM   | 0           | Actual Value |           |           |  |
|-------|-------------|--------------|-----------|-----------|--|
| Units | Format      | Range        | Increment | Max Chars |  |
|       | Text String | Lexical      |           | 80        |  |



|     |  |                      |                                |                       |
|-----|--|----------------------|--------------------------------|-----------------------|
| OIT | <i>Object Illumination Type</i>  |                      |                                |                       |
|     | Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination) |                      |                                |                       |
|     | Applies to area features.  |                      |                                |                       |
|     | OIT  | 1                    | SELF                           |                       |
| PRO | OIT  | 2                    | SUN                            |                       |
|     | OIT  | 3                    | NOSUN                          |                       |
|     | <i>Product Category</i>  |                      |                                |                       |
|     | Principal material involved or product resulting from activity at site.  |                      |                                |                       |
| PRO | 0  | Unknown              |                                |                       |
| PRO | 5  | Asphalt              |                                |                       |
| PRO | 13   | Chemical             |                                |                       |
| PRO | 22   | Conglomerate         |                                |                       |
| PRO | 26   | Desalinated Water    |                                |                       |
| PRO | 30   | Earthen              |                                |                       |
| PRO | 31   | Electric             |                                |                       |
| PRO | 33   | Explosives           |                                |                       |
| PRO | 35   | Food                 |                                |                       |
| PRO | 38   | Gas                  |                                |                       |
| PRO | 39   | Gasoline             |                                |                       |
| PRO | 50   | Heat                 |                                |                       |
| PRO | 52   | Lava                 |                                |                       |
| PRO | 67   | Oil                  |                                |                       |
| PRO | 69   | Ooze                 |                                |                       |
| PRO | 82   | Radioactive Material |                                |                       |
| PRO | 102  | Sludge               |                                |                       |
| PRO | 116  | Water                |                                |                       |
| PRO | 128  | Refuse               |                                |                       |
| PRO | 130  | None                 |                                |                       |
| PRO | 132  | Not Applicable       |                                |                       |
| PRO | 133  | Telecommunications   |                                |                       |
| PRO | 997  | Not Applicable       |                                |                       |
| PRO | 998  | Multiple             |                                |                       |
| PRO | 999  | Other                |                                |                       |
| RFL | <i>Reflectance</i>   |                      |                                |                       |
|     | Ratio of radiant energy reflected by and object to the amount incident upon it.  |                      |                                |                       |
|     | Units  | Format               | Range                          | Increment    Max Char |
|     |  | Real (f7.6)          | 0.0 .. 1.0                     |                       |
| SCC | <i>Spring/Well Characteristic Category</i>   |                      |                                |                       |
|     | Type of available water.   |                      |                                |                       |
|     | SCC  | 0                    | Unknown                        |                       |
|     | SCC  | 1                    | Alkaline                       |                       |
|     | SCC  | 2                    | Not Applicable                 |                       |
|     | SCC  | 3                    | VALUE INTENTIONALLY LEFT BLANK |                       |
|     | SCC  | 4                    | Mineral                        |                       |
|     | SCC  | 5                    | VALUE INTENTIONALLY LEFT BLANK |                       |
|     | SCC  | 6                    | VALUE INTENTIONALLY LEFT BLANK |                       |
|     | SCC  | 9                    | Freshwater /Potable            |                       |
|     | SCC  | 10                   | Salt                           |                       |
|     | SCC  | 11                   | Fresh                          |                       |

SCC 999 Other

*SER*

*Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

*SMS*

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynnh  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |

|     |     |                          |
|-----|-----|--------------------------|
| SMS | 44  | Glass                    |
| SMS | 45  | Globigerina              |
| SMS | 46  | Gold                     |
| SMS | 47  | Granite                  |
| SMS | 48  | INTENTIONALLY LEFT BLANK |
| SMS | 49  | Gravel                   |
| SMS | 50  | Green Rocks              |
| SMS | 51  | Ground (Shells)          |
| SMS | 52  | Iron                     |
| SMS | 53  | Lava                     |
| SMS | 55  | Lead                     |
| SMS | 56  | Loess                    |
| SMS | 57  | Lumber                   |
| SMS | 58  | Macadam                  |
| SMS | 59  | Madrepores               |
| SMS | 60  | Manganese                |
| SMS | 61  | Marble                   |
| SMS | 62  | Marl                     |
| SMS | 63  | Mattes                   |
| SMS | 64  | Mud                      |
| SMS | 65  | Oil                      |
| SMS | 66  | Oil Blister              |
| SMS | 67  | Ooze                     |
| SMS | 70  | Pebbles                  |
| SMS | 71  | Pumice                   |
| SMS | 72  | Quartz                   |
| SMS | 73  | Radiolaria               |
| SMS | 74  | Radioactive Material     |
| SMS | 75  | Reinforced Concrete      |
| SMS | 76  | Rock/Rocky               |
| SMS | 77  | Rubber                   |
| SMS | 78  | Rubble                   |
| SMS | 79  | Salt                     |
| SMS | 80  | Sand                     |
| SMS | 81  | Sandstone                |
| SMS | 82  | Schist                   |
| SMS | 83  | Spoils/Tailings          |
| SMS | 84  | Scoria                   |
| SMS | 85  | Sewage                   |
| SMS | 86  | Shells                   |
| SMS | 87  | Shingle                  |
| SMS | 88  | Silt                     |
| SMS | 89  | Silver                   |
| SMS | 90  | Slag                     |
| SMS | 91  | Sludge                   |
| SMS | 92  | Snow/Ice                 |
| SMS | 93  | Steel                    |
| SMS | 94  | Stone                    |
| SMS | 95  | Travertin                |
| SMS | 96  | Tufa                     |
| SMS | 97  | Uranium                  |
| SMS | 98  | Volcanic                 |
| SMS | 99  | Volcanic Ash             |
| SMS | 100 | Zinc                     |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

**SPC**      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

**SS1**      *Sensors Supported*  
**SS2**  
**SS3**      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

**SWT**      *Well/Spring Type*  
Identifies the type of spring or water-hole.  
SWT 0      Unknown  
SWT 1      Geyser  
SWT 2      Hot Spring  
SWT 3      Fumarole  
SWT 4      Artesian  
SWT 5      Water Hole  
SWT 6      Walled-In Spring  
SWT 999      Other

**TMR**      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TRL**      *Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

**TRV**      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TTP**      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).  
TTP 1      RGB  
TTP 2      GRAY  
TTP 3      MULTI

TTP 4 SMFD

**TXT** Text Attribute  
Narrative or other description.  
TXT 0 Actual Value

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

**WFT** Well Feature Type  
Type of well.

|     |   |                     |
|-----|---|---------------------|
| WFT | 0 | Unknown             |
| WFT | 1 | Waterhole           |
| WFT | 2 | Walled-in Spring    |
| WFT | 3 | Artesian Well       |
| WFT | 4 | Fountain            |
| WFT | 5 | Dug or Drilled Well |

**WID** Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**ZV2** Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

| Units  | Format        | Range          | Increment | Max Chars |
|--------|---------------|----------------|-----------|-----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

#### Associated Extraction Feature Class ID

**F-Code/Description**

|       |                        |
|-------|------------------------|
| AA011 | Quarry/Mine Shear Wall |
| AA040 | Rig/Superstructure     |
| AA051 | Wellhead               |

The top of a well, as in oil, gas, or water well, that caps the well structure and which may be located on land or partially submerged offshore which nautical vessels can use for lashings.

**ABS** *Absorptivity*  
Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**CCC** Color Code Category

|     |   |                        |
|-----|---|------------------------|
| CCC | 0 | Unknown/Not applicable |
| CCC | 1 | Black                  |
| CCC | 2 | Blue                   |
| CCC | 3 | Brown                  |
| CCC | 4 | Gray                   |
| CCC | 5 | Green                  |
| CCC | 7 | Chocolate              |

|     |     |               |
|-----|-----|---------------|
| CCC | 9   | Orange        |
| CCC | 12  | Red           |
| CCC | 14  | Violet        |
| CCC | 15  | White         |
| CCC | 19  | Yellow        |
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|     |                                    |           |
|-----|------------------------------------|-----------|
| CIC | Color Intensity Category           |           |
|     | Identifies the intensity of color. |           |
|     | CIC                                | 0 Unknown |
|     | CIC                                | 1 Dark    |
|     | CIC                                | 2 Light   |
|     | CIC                                | 999 Other |

|     |   |                                  |
|-----|---|----------------------------------|
| COC | Conspicuous Category  |                                  |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                  |
|     | COC   | 0 Unknown                        |
|     | COC   | 1 Conspicuous from sea           |
|     | COC   | 2 VALUE INTENTIONALLY LEFT BLANK |
|     | COC   | 3 Radar Conspicuous from sea     |
|     | COC   | 4 Conspicuous from land          |
|     | COC   | 5 Conspicuous from air           |
|     | COC   | 6 Inconspicuous                  |
|     | COC   | 7 Generally Conspicuous          |
|     | COC   | 8 Not visual conspicuous         |
|     | COC   | 9 Visual conspicuous             |
|     | COC   | 10 Not radar conspicuous         |
|     | COC   | 999 Other                        |

|     |   |                                 |
|-----|---|---------------------------------|
| DEP | Depth Below Surface Level   |                                 |
|     | Distance measured from the highest point at surface level to the lowest point of the feature below the surface. Recorded values are positive numbers. |                                 |
|     | DEP   | 0 Actual Value                  |
|     | Units   | Format Range Increment Max Char |
|     | Meters  | Floating Point 0.1 M            |

|     |  |  |
|-----|--|--|
| DYI | Directivity  |  |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (visual response). |  |

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      *Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      *Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

**EMY**      *Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**EXI**      *Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

**EXS**      *Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |
| EXS | 12 | Alternate          |
| EXS | 18 | Permanent          |
| EXS | 25 | Not Maintained     |
| EXS | 26 | Maintained         |
| EXS | 27 | Closed/Locked      |
| EXS | 28 | Operational        |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

**FOT**      *Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

**HGT**      *Height Above Surface Level*

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0      Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**HYC**      *Hydrological Category*

Identifies the annual water content of the feature.

HYC 0      Unknown

HYC 2      Not Applicable

HYC 3      Dry

HYC 6      Non-Perennial /Intermittent /Fluctuating

HYC 8      Perennial /Permanent

HYC 999      Other

**LEN**      *Length/Diameter of Point Feature*

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0      Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |



|     |  |               |   |                  |                 |
|-----|--|---------------|---|------------------|-----------------|
| LLE | <i>Low Level Effects</i>   |               |   |                  |                 |
|     | Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  |               |   |                  |                 |
|     | LLE T  |               |   |                  |                 |
|     | LLE F  |               |   |                  |                 |
| LLL | <i>Long Lineal</i>   |               |   |                  |                 |
|     | Reference to a point feature which could potentially look like a long linear feature by radar.   |               |   |                  |                 |
|     | Applies to point features  |               |   |                  |                 |
|     | LLL T  |               |   |                  |                 |
| LN1 | <i>Layer Number</i>  |               |   |                  |                 |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).   |               |   |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Char</u> |
|     | Integer  |               | 0.. 2147483647                              |                  |                 |
| LN2 | <i>Layer Number (IR)</i>   |               |   |                  |                 |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |   |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Char</u> |
|     | Integer  |               | 0.. 2147483647                              |                  |                 |
| LN3 | <i>Layer Number (Radar)</i>  |               |   |                  |                 |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |   |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Char</u> |
|     | Integer  |               | 0.. 2147483647                              |                  |                 |
| LOC | <i>Location Category</i>   |               |   |                  |                 |
|     | Status of feature relative to surrounding area or water.   |               |   |                  |                 |
|     | LOC  | 0             | Unknown                                     |                  |                 |
|     | LOC  | 1             | Above Surface/Does not Cover (Height Known) |                  |                 |
|     | LOC  | 2             | Awash at Chart Datum                        |                  |                 |
|     | LOC  | 3             | Dries/Covers (Height Unknown)               |                  |                 |
|     | LOC  | 4             | Below Surface /Submerged/Underground        |                  |                 |
|     | LOC  | 5             | Covered < 20 Meters                         |                  |                 |
|     | LOC  | 6             | Covered ≥ 20 Meters but < 30 Meters         |                  |                 |
|     | LOC  | 7             | Covered ≥30 Meters                          |                  |                 |
|     | LOC  | 8             | On Ground Surface                           |                  |                 |
|     | LOC  | 9             | Depth Known                                 |                  |                 |
|     | LOC  | 10            | Depth Known ( Cleared by Drag Wire)         |                  |                 |
|     | LOC  | 11            | Depth Unknown But Safe to Depth Shown       |                  |                 |
|     | LOC  | 12            | VALUE INTENTIONALLY LEFT BLANK              |                  |                 |
|     | LOC  | 13            | Hull Showing                                |                  |                 |

|     |     |   |
|-----|-----|---|
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

RFL

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SER

*Self Emitter*

Indicates that an object has self heating characteristics

SER T  
SER F

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

SMS 0 Unknown

|     |    |   |
|-----|----|---|
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

# SPC F

## SS1 *Sensors Supported*

SS2

SS3 Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

## TMR *Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

## TRL *Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

## TRV *Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

## TTP *Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

## WID *Width*

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

## ZV2 *Highest Z-value*

Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Chars |
|--------|---------------|----------------|-----------|-----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

## Disposal Feature Class

ID

## F-Code/Description

AB000 Disposal Site/Waste Pile

AB010 Wrecking Yard/Scrap Yard

AB020 Burner  
AB021 Diffuser

**ABS**

**Absorptivity**

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**AOO**

**Angle of Orientation**

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

**ARA**

**Area Coverage Attribute**

The absolute area within the delineation of the feature.

ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

**ATN**

**Aids to Navigation**

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

**CCC**

**Color Code Category**

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |
| CCC | 49 | Buff                   |
| CCC | 51 | Bluegreen              |
| CCC | 52 | Bright Blue            |
| CCC | 53 | Aqua                   |
| CCC | 55 | Bright Green           |
| CCC | 58 | Bright Yellow          |
| CCC | 61 | Bright Red             |
| CCC | 63 | Cyan                   |
| CCC | 64 | Purple                 |

|     |     |          |
|-----|-----|----------|
| CCC | 69  | Pink     |
| CCC | 70  | Lavender |
| CCC | 999 | Other    |

CIC      Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC      Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

DFR      *Diffuse Reflectance*  
Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1      *Directivity*  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2      *Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3      *Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

The state or condition of the feature.

|     |    |                         |
|-----|----|-------------------------|
| EXS | 0  | Unknown                 |
| EXS | 1  | Definite                |
| EXS | 2  | Doubtful                |
| EXS | 3  | Reported                |
| EXS | 5  | Under Construction      |
| EXS | 6  | Abandoned/Disused       |
| EXS | 7  | Destroyed               |
| EXS | 10 | Proposed                |
| EXS | 11 | Temporary               |
| EXS | 12 | Alternate               |
| EXS | 18 | Permanent               |
| EXS | 25 | Not Maintained          |
| EXS | 26 | Maintained              |
| EXS | 27 | Closed/Locked           |
| EXS | 28 | Operational             |
| EXS | 30 | Not Isolated            |
| EXS | 31 | Isolated                |
| EXS | 33 | Ruined                  |
| EXS | 35 | Other                   |
| EXS | 44 | Approximate/About       |
| EXS | 45 | Natural                 |
| EXS | 46 | Man-made                |
| EXS | 47 | Swept                   |
| EXS | 48 | Controlled              |
| EXS | 49 | Non-Controlled          |
| EXS | 50 | Non-Tidal               |
| EXS | 51 | Tidal/Tidal Fluctuation |
| EXS | 52 | Dissipating             |
| EXS | 53 | Incomplete              |
| EXS | 54 | Antique/Ancient         |
| EXS | 55 | Unexamined/Unsurveyed   |
| EXS | 56 | Unattended/Unwatched    |
| EXS | 59 | Not Usable              |



|     |     |                        |
|-----|-----|------------------------|
| EXS | 60  | Indefinite (Shoreline) |
| EXS | 61  | Definite Shoreline     |
| EXS | 62  | Partially Destroyed    |
| EXS | 65  | Inactive               |
| EXS | 998 | Not Applicable         |
| EXS | 999 | Other                  |

**FOT**      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

**HGT**      *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT 0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LEN**      *Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE**      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

**LLL**      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

**LN1**      *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN2**      *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

PRO

*Product Category*

Principal material involved or product resulting from activity at site.

|     |     |                      |
|-----|-----|----------------------|
| PRO | 0   | Unknown              |
| PRO | 5   | Asphalt              |
| PRO | 13  | Chemical             |
| PRO | 22  | Conglomerate         |
| PRO | 26  | Desalinated Water    |
| PRO | 30  | Earthen              |
| PRO | 31  | Electric             |
| PRO | 33  | Explosives           |
| PRO | 35  | Food                 |
| PRO | 38  | Gas                  |
| PRO | 39  | Gasoline             |
| PRO | 50  | Heat                 |
| PRO | 52  | Lava                 |
| PRO | 67  | Oil                  |
| PRO | 69  | Ooze                 |
| PRO | 82  | Radioactive Material |
| PRO | 102 | Sludge               |
| PRO | 116 | Water                |
| PRO | 128 | Refuse               |
| PRO | 130 | None                 |
| PRO | 132 | Not Applicable       |
| PRO | 133 | Telecommunications   |
| PRO | 997 | Not Applicable       |
| PRO | 998 | Multiple             |
| PRO | 999 | Other                |

RFL

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SER

*Self Emitter*

Indicates that an object has self heating characteristics

|     |   |
|-----|---|
| SER | T |
| SER | F |

*SMS**Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flysch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 50  | Green Rocks          |
| SMS | 51  | Ground (Shells)      |
| SMS | 52  | Iron                 |
| SMS | 53  | Lava                 |
| SMS | 55  | Lead                 |
| SMS | 56  | Loess                |
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |

|     |   |               |              |                  |                  |
|-----|---|---------------|--------------|------------------|------------------|
| SPC | <i>Specular</i>   |               |              |                  |                  |
|     | Flag indicating that the object has the quality of being mirror-like.   |               |              |                  |                  |
|     | SPC T   |               |              |                  |                  |
|     | SPC F   |               |              |                  |                  |
| SS1 | <i>Sensors Supported</i>  |               |              |                  |                  |
| SS2 | Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)                             |               |              |                  |                  |
| SS3 |   |               |              |                  |                  |
|     | SS1(SS2,SS3) T  |               |              |                  |                  |
|     | SS1(SS2,SS3) F  |               |              |                  |                  |
| TMR | <i>Texture Map Reflectance</i>  |               |              |                  |                  |
|     | Reflectance value assigned to a texture map   |               |              |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real (f7.6)   | 0.0 .. 1.0   |                  |                  |
| TRL | <i>Translucency</i>   |               |              |                  |                  |
|     | The degree to which a surface is transparent.   |               |              |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real (f7.3)   | 0.0 .. 100.0 |                  |                  |
| TRV | <i>Transmissivity</i>   |               |              |                  |                  |
|     | Ratio of energy transmitted by an object to the amount of energy incident upon it.  |               |              |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real (f7.6)   | 0.0 .. 1.0   |                  |                  |
| TTP | <i>Texture Type</i>   |               |              |                  |                  |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC).  |               |              |                  |                  |
|     | TTP   | 1             | RGB          |                  |                  |
|     | TTP   | 2             | GRAY         |                  |                  |
|     | TTP   | 3             | MULTI        |                  |                  |
|     | TTP   | 4             | SMFD         |                  |                  |
| TXT | <i>Text Attribute</i>   |               |              |                  |                  |
|     | Narrative or other description.   |               |              |                  |                  |
|     | TXT   | 0             | Actual Value |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Text String   | Lexical      |                  | 256              |
| WID | <i>Width</i>  |               |              |                  |                  |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |               |              |                  |                  |
|     | WID   | 0             | Actual Value |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters  | Short Integer | 0±32,767     | 1 M              |                  |
| ZV2 | Highest Z-value   |               |              |                  |                  |

Elevation above a given datum to the highest portion of the feature.

| ZV2    | 0             | Actual Value   |           |           |  |
|--------|---------------|----------------|-----------|-----------|--|
| Units  | Format        | Range          | Increment | Max Chars |  |
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |  |

## Processing Industry Feature Class

### ID

#### F-Code/Description

|       |                                  |
|-------|----------------------------------|
| AC000 | Processing Plant/Treatment Plant |
| AC010 | Blast Furnace                    |
| AC020 | Catalytic Cracker                |
| AC030 | Settling Basin/Sludge Pond       |
| AC040 | Oil/Gas Facilities               |
| AC050 | Works                            |

### ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

### AOO

#### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| AOO     | 0             | Actual Value |           |           |  |
|---------|---------------|--------------|-----------|-----------|--|
| Units   | Format        | Range        | Increment | Max Chars |  |
| Degrees | Short Integer | 0-360        | 1 DEG     |           |  |

### ATN

#### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

### CCC

#### Color Code Category

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |
| CCC | 47 | Magenta                |
| CCC | 48 | Amber                  |

|     |     |               |
|-----|-----|---------------|
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|     |                                    |         |
|-----|------------------------------------|---------|
| CIC | Color Intensity Category           |         |
|     | Identifies the intensity of color. |         |
| CIC | 0                                  | Unknown |
| CIC | 1                                  | Dark    |
| CIC | 2                                  | Light   |
| CIC | 999                                | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category  |                                |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

|       |   |            |            |           |          |
|-------|---|------------|------------|-----------|----------|
| DFR   | Diffuse Reflectance                                 |            |            |           |          |
|       | Radar backscatter coefficient, expressed as a ratio |            |            |           |          |
| Units |   | Format     | Range      | Increment | Max Char |
|       |   | Real(f7.6) | 0.0 .. 1.0 |           |          |

|     |  |         |
|-----|--|---------|
| DY1 | Directivity  |         |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (visual response). |         |
| DY1 | 0  | Unknown |
| DY1 | 1  | Uni     |
| DY1 | 2  | Bi      |
| DY1 | 3  | Omni    |
| DY1 | 999  | Other   |

*DY2 Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

*DY3 Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |
| EXS | 12 | Alternate          |
| EXS | 18 | Permanent          |
| EXS | 25 | Not Maintained     |
| EXS | 26 | Maintained         |
| EXS | 27 | Closed/Locked      |
| EXS | 28 | Operational        |
| EXS | 30 | Not Isolated       |
| EXS | 31 | Isolated           |
| EXS | 33 | Ruined             |
| EXS | 35 | Other              |
| EXS | 44 | Approximate/About  |



|     |     |                         |
|-----|-----|-------------------------|
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

**FOT**      *Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

**HGT**      Height Above Surface Level

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0      Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LEN**      Length/Diameter of Point Feature

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0      Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE**      *Low Level Effects*

Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T

LLE F

**LLL**      *Long Lineal*

Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T

LLL F

**LN1**      *Layer Number*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN2**      *Layer Number (IR)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN3**      *Layer Number (Radar)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**NAM**      Name  
 Any Identifier or code.

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

**OIT**      *Object Illumination Type*  
 Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

**PRO**      Product Category  
 Principal material involved or product resulting from activity at site.

|     |    |                   |
|-----|----|-------------------|
| PRO | 0  | Unknown           |
| PRO | 5  | Asphalt           |
| PRO | 13 | Chemical          |
| PRO | 22 | Conglomerate      |
| PRO | 26 | Desalinated Water |
| PRO | 30 | Earthen           |
| PRO | 31 | Electric          |
| PRO | 33 | Explosives        |
| PRO | 35 | Food              |
| PRO | 38 | Gas               |
| PRO | 39 | Gasoline          |
| PRO | 50 | Heat              |
| PRO | 52 | Lava              |
| PRO | 67 | Oil               |

|     |     |                      |
|-----|-----|----------------------|
| PRO | 69  | Ooze                 |
| PRO | 82  | Radioactive Material |
| PRO | 102 | Sludge               |
| PRO | 116 | Water                |
| PRO | 128 | Refuse               |
| PRO | 130 | None                 |
| PRO | 132 | Not Applicable       |
| PRO | 133 | Telecommunications   |
| PRO | 997 | Not Applicable       |
| PRO | 998 | Multiple             |
| PRO | 999 | Other                |

*RFL*

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER*

*Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

*SS1 Sensors Supported*

*SS2*

*SS3*

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*TMR Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

|            |   |                |           |           |  |
|------------|---|----------------|-----------|-----------|--|
| <b>TTP</b> | <i>Texture Type</i><br>Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC).   |                |           |           |  |
| TTP        | 1   | RGB            |           |           |  |
| TTP        | 2   | GRAY           |           |           |  |
| TTP        | 3   | MULTI          |           |           |  |
| TTP        | 4   | SMFD           |           |           |  |
| <b>TXT</b> | <i>Text Attribute</i><br>Narrative or other description.  |                |           |           |  |
| TXT        | 0   | Actual Value   |           |           |  |
| Units      | Format  | Range          | Increment | Max Char  |  |
|            | Text String   | Lexical        |           | 256       |  |
| <b>WID</b> | <i>Width</i><br>A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |                |           |           |  |
| WID        | 0   | Actual Value   |           |           |  |
| Units      | Format  | Range          | Increment | Max Chars |  |
| Meters     | Short Integer   | 0±32,767       | 1 M       |           |  |
| <b>ZV2</b> | <i>Highest Z-value</i><br>Elevation above a given datum to the highest portion of the feature.  |                |           |           |  |
| ZV2        | 0   | Actual Value   |           |           |  |
| Units      | Format  | Range          | Increment | Max Chars |  |
| Meters     | Short Integer   | -400 to 30,000 | 1 M       |           |  |

#### **Associated Industrial Structure Feature Class**

##### **ID**

##### **F-Code/Description**

AF010 Chimney/Smokestack  
 AF020 Conveyor  
 AF030 Cooling Tower  
 AF060 Engine Test Cell  
 AF070 Flare Pipe

##### **ABS**

##### *Absorptivity*

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

##### **ACC**

##### *Accuracy Category*

Accuracy of geographic position.

ACC 0 Unknown  
 ACC 1 Accurate  
 ACC 2 Approximate  
 ACC 3 Doubtful  
 ACC 5 Disputed  
 ACC 6 Undisputed  
 ACC 7 Precise  
 ACC 8 Abrogated

**AOO**      Angle of Orientation  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| AOO     | 0             | Actual Value |       |           |           |
|---------|---------------|--------------|-------|-----------|-----------|
| Units   |               | Format       | Range | Increment | Max Chars |
| Degrees | Short Integer |              | 0-360 | 1 DEG     |           |

**ATN**      Aids to Navigation  
Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

**CCC**      Color Code Category

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

**CIC**      Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

**COC**      **Conspicuous Category**  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

**DFR**      **Diffuse Reflectance**  
Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**DMS**      **Density Measure (Structure Count)**  
Density of structures within a square kilometer (1000m x 1000m).

| DMS        | 0             | Actual Value |             |          |
|------------|---------------|--------------|-------------|----------|
| Units      | Format        | Range        | Increment   | Max Char |
| Structures | Short Integer | 0±32,767     | 1 STRUCTURE |          |

**DY1**      **Directivity**  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      **Directivity (IR)**  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      **Directivity (Radar)**  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |   |         |
|-----|---|---------|
| DY3 | 0 | Unknown |
| DY3 | 1 | Uni     |
| DY3 | 2 | Bi      |
| DY3 | 3 | Omni    |



DY3 999 Other

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

The state or condition of the feature.

|     |    |                         |
|-----|----|-------------------------|
| EXS | 0  | Unknown                 |
| EXS | 1  | Definite                |
| EXS | 2  | Doubtful                |
| EXS | 3  | Reported                |
| EXS | 5  | Under Construction      |
| EXS | 6  | Abandoned/Disused       |
| EXS | 7  | Destroyed               |
| EXS | 10 | Proposed                |
| EXS | 11 | Temporary               |
| EXS | 12 | Alternate               |
| EXS | 18 | Permanent               |
| EXS | 25 | Not Maintained          |
| EXS | 26 | Maintained              |
| EXS | 27 | Closed/Locked           |
| EXS | 28 | Operational             |
| EXS | 30 | Not Isolated            |
| EXS | 31 | Isolated                |
| EXS | 33 | Ruined                  |
| EXS | 35 | Other                   |
| EXS | 44 | Approximate/About       |
| EXS | 45 | Natural                 |
| EXS | 46 | Man-made                |
| EXS | 47 | Swept                   |
| EXS | 48 | Controlled              |
| EXS | 49 | Non-Controlled          |
| EXS | 50 | Non-Tidal               |
| EXS | 51 | Tidal/Tidal Fluctuation |
| EXS | 52 | Dissipating             |
| EXS | 53 | Incomplete              |
| EXS | 54 | Antique/Ancient         |
| EXS | 55 | Unexamined/Unsurveyed   |
| EXS | 56 | Unattended/Unwatched    |
| EXS | 59 | Not Usable              |
| EXS | 60 | Indefinite (Shoreline)  |
| EXS | 61 | Definite Shoreline      |
| EXS | 62 | Partially Destroyed     |
| EXS | 65 | Inactive                |

EXS 998 Not Applicable  
EXS 999 Other

**FOT** *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

**HGT** *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT 0 Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**IMC** *Internal Material Category*  
Category code for material internal to an object.  

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

**LEN** *Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0 Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE** *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

**LLL** *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

**LN1** *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN2** *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

|            | Units   | Format      | Range   | Increment | Max Char |
|------------|---|-------------|---|-----------|----------|
|            |   | Integer     | 0.. 2147483647  |           |          |
| <i>LN3</i> | <i>Layer Number (Radar)</i><br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |             |   |           |          |
|            | Units   | Format      | Range   | Increment | Max Char |
|            |   | Integer     | 0.. 2147483647  |           |          |
| <i>OIT</i> | <i>Object Illumination Type</i><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features.  |             |   |           |          |
|            | OIT   | 1           | SELF  |           |          |
|            | OIT   | 2           | SUN   |           |          |
|            | OIT   | 3           | NOSUN   |           |          |
| <i>RFL</i> | <i>Reflectance</i><br>Ratio of radiant energy reflected by and object to the amount incident upon it.   |             |   |           |          |
|            | Units   | Format      | Range   | Increment | Max Char |
|            |   | Real (f7.6) | 0.0 .. 1.0  |           |          |
| <i>SER</i> | <i>Self Emitter</i><br>Indicates that an object has self heating characteristics<br>SER T<br>SER F  |             |   |           |          |
| <i>SMS</i> | <i>Surface Material Subtype</i><br>Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.  |             |   |           |          |
|            | SMS   | 0           | Unknown   |           |          |
|            | SMS   | 1           | GW Well graded gravels or gravel-sand mixtures        |           |          |
|            | SMS   | 2           | GP Poorly graded gravels or gravel-sand mixtures      |           |          |
|            | SMS   | 3           | GM Silty gravels, gravel-sand-silt mixtures           |           |          |
|            | SMS   | 4           | GC Clayey gravels, gravel-sand-clay mixture           |           |          |
|            | SMS   | 5           | SW Well graded sand or gravelly sands                 |           |          |
|            | SMS   | 6           | SP Poorly graded sands or gravelly sands              |           |          |
|            | SMS   | 7           | SM Silty sands, sand-silt mixture.                    |           |          |
|            | SMS   | 8           | SC Clayey sands, sand-clay mixtures                   |           |          |
|            | SMS   | 9           | ML Inorganic silts and very fine sands                |           |          |
|            | SMS   | 10          | CL Inorganic clays of low to medium plasticity        |           |          |
|            | SMS   | 11          | OL Organic silts and organic silty clays              |           |          |
|            | SMS   | 12          | CH Inorganic clays of high plasticity, fat clays      |           |          |
|            | SMS   | 13          | MH Inorganic silts, micaceous or diatomaceous         |           |          |
|            | SMS   | 14          | OH Organic clays of medium to high plasticity         |           |          |
|            | SMS   | 15          | PT Peat and other highly organic soils                |           |          |
|            | SMS   | 17          | ML-CL Soil type having both ML and CL characteristics |           |          |
|            | SMS   | 18          | Evaporites  |           |          |
|            | SMS   | 19          | Alkali  |           |          |
|            | SMS   | 20          | Asphalt   |           |          |
|            | SMS   | 21          | Ash   |           |          |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 22 | Basalt                   |
| SMS | 23 | Bedrock                  |
| SMS | 24 | Boulders                 |
| SMS | 25 | Calcareous               |
| SMS | 26 | Chalk                    |
| SMS | 27 | Cinders                  |
| SMS | 28 | Cirripedia               |
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 79  | Salt              |
| SMS | 80  | Sand              |
| SMS | 81  | Sandstone         |
| SMS | 82  | Schist            |
| SMS | 83  | Spoils/Tailings   |
| SMS | 84  | Scoria            |
| SMS | 85  | Sewage            |
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*      *Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

**TRV**      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TTP**      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

**TXT**      Text Attribute  
Narrative or other description.

|     |   |              |
|-----|---|--------------|
| TXT | 0 | Actual Value |
|-----|---|--------------|

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

**WID**      Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|     |   |              |
|-----|---|--------------|
| WID | 0 | Actual Value |
|-----|---|--------------|

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**USE**      Usage  
Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |

|     |     |                                   |
|-----|-----|-----------------------------------|
| USE | 30  | Secondary/2nd Order               |
| USE | 31  | Tertiary/3rd Order                |
| USE | 32  | Insular                           |
| USE | 33  | Provincial                        |
| USE | 37  | Interstate                        |
| USE | 41  | Industrial                        |
| USE | 42  | Commercial                        |
| USE | 43  | Institutional                     |
| USE | 44  | Residential                       |
| USE | 45  | Agricultural                      |
| USE | 48  | Decoy                             |
| USE | 49  | Civilian/Public                   |
| USE | 50  | Limited                           |
| USE | 51  | Telegraph                         |
| USE | 52  | Telephone                         |
| USE | 53  | Power                             |
| USE | 57  | Marine                            |
| USE | 60  | Avalanche                         |
| USE | 61  | Refugee                           |
| USE | 62  | Prisoner                          |
| USE | 68  | Animal sanctuary                  |
| USE | 69  | Levee/Dike                        |
| USE | 70  | Reserve/Reservation               |
| USE | 73  | Terminus/Terminal                 |
| USE | 74  | Low Altitude enroute              |
| USE | 75  | High Altitude Enroute             |
| USE | 76  | Low and High Altitude Enroute     |
| USE | 77  | Short Take-off Landing Approach   |
| USE | 78  | Visual Approach                   |
| USE | 79  | Non-Precision Instrument Approach |
| USE | 80  | Precision Instrument Approach     |
| USE | 81  | Entry                             |
| USE | 82  | Exit                              |
| USE | 83  | Transaction                       |
| USE | 84  | Feeder                            |
| USE | 85  | Initial Approach Fix              |
| USE | 86  | Final Approach Fix                |
| USE | 87  | Visual Descent Point              |
| USE | 88  | Missed Approach Point             |
| USE | 89  | Radar                             |
| USE | 90  | Mileage Break Down                |
| USE | 91  | NAVAID Changeover                 |
| USE | 92  | Altimeter Change                  |
| USE | 93  | Compulsory Reporting Points       |
| USE | 94  | Non-Compulsory Reporting Points   |
| USE | 95  | Alert Apron/Hardstand             |
| USE | 96  | Operational Apron/Hardstand       |
| USE | 97  | Hanger/Apron                      |
| USE | 98  | Base Flight Apron                 |
| USE | 99  | Engine Test Pad/Apron             |
| USE | 100 | Transient Apron                   |
| USE | 101 | Depot Apron                       |
| USE | 102 | Stub Apron                        |
| USE | 103 | Dispersal Hardstand               |

|     |     |   |
|-----|-----|---|
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

ZV2 Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|        |               |                |           |           |
|--------|---------------|----------------|-----------|-----------|
| ZV2    | 0             | Actual Value   |           |           |
| Units  | Format        | Range          | Increment | Max Chars |
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

#### Industrial Equipment Feature Class

ID

F-Code/Description  
AF040 Crane



AF041 Sheerlegs (Shear Legs)  
Comprises two or three spars standing on end and lashed together, aloft. They serve as a derrick or tripod to lift heavy weights, step or lower masts, stacks, etc.

AF050 Dredge/Powershovel/Dragline

AF080 Hopper

#### ABS

##### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

#### AOO

##### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

#### ATN

##### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

#### CCC

##### Color Code Category

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |
| CCC | 47 | Magenta                |
| CCC | 48 | Amber                  |
| CCC | 49 | Buff                   |
| CCC | 51 | Bluegreen              |
| CCC | 52 | Bright Blue            |
| CCC | 53 | Aqua                   |
| CCC | 55 | Bright Green           |
| CCC | 58 | Bright Yellow          |
| CCC | 61 | Bright Red             |
| CCC | 63 | Cyan                   |
| CCC | 64 | Purple                 |
| CCC | 69 | Pink                   |

|     |   |            |                                |
|-----|---|------------|--------------------------------|
|     | CCC   | 70         | Lavender                       |
|     | CCC   | 999        | Other                          |
| CIC | Color Intensity Category<br>Identifies the intensity of color.  |            |                                |
|     | CIC   | 0          | Unknown                        |
|     | CIC   | 1          | Dark                           |
|     | CIC   | 2          | Light                          |
|     | CIC   | 999        | Other                          |
| COC | Conspicuous Category<br>A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |            |                                |
|     | COC   | 0          | Unknown                        |
|     | COC   | 1          | Conspicuous from sea           |
|     | COC   | 2          | VALUE INTENTIONALLY LEFT BLANK |
|     | COC   | 3          | Radar Conspicuous from sea     |
|     | COC   | 4          | Conspicuous from land          |
|     | COC   | 5          | Conspicuous from air           |
|     | COC   | 6          | Inconspicuous                  |
|     | COC   | 7          | Generally Conspicuous          |
|     | COC   | 8          | Not visual conspicuous         |
|     | COC   | 9          | Visual conspicuous             |
|     | COC   | 10         | Not radar conspicuous          |
|     | COC   | 999        | Other                          |
| DFR | Diffuse Reflectance<br>Radar backscatter coefficient, expressed as a ratio  |            |                                |
|     | Units   | Format     | Range                          |
|     |   |            | Increment                      |
|     |   |            | Max Char                       |
|     |   | Real(f7.6) | 0.0 .. 1.0                     |
| DY1 | Directivity<br>Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).   |            |                                |
|     | DY1   | 0          | Unknown                        |
|     | DY1   | 1          | Uni                            |
|     | DY1   | 2          | Bi                             |
|     | DY1   | 3          | Omni                           |
|     | DY1   | 999        | Other                          |
| DY2 | Directivity (IR)<br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |            |                                |
|     | DY2   | 0          | Unknown                        |
|     | DY2   | 1          | Uni                            |
|     | DY2   | 2          | Bi                             |
|     | DY2   | 3          | Omni                           |
|     | DY2   | 999        | Other                          |
| DY3 | Directivity (Radar)<br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).   |            |                                |
|     | DY3   | 0          | Unknown                        |

|     |     |       |
|-----|-----|-------|
| DY3 | 1   | Uni   |
| DY3 | 2   | Bi    |
| DY3 | 3   | Omni  |
| DY3 | 999 | Other |

# *EMY*

## *Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

# *EXI*

## *Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

# *EXS*

## Existence Category

The state or condition of the feature.

|     |    |                         |
|-----|----|-------------------------|
| EXS | 0  | Unknown                 |
| EXS | 1  | Definite                |
| EXS | 2  | Doubtful                |
| EXS | 3  | Reported                |
| EXS | 5  | Under Construction      |
| EXS | 6  | Abandoned/Disused       |
| EXS | 7  | Destroyed               |
| EXS | 10 | Proposed                |
| EXS | 11 | Temporary               |
| EXS | 12 | Alternate               |
| EXS | 18 | Permanent               |
| EXS | 25 | Not Maintained          |
| EXS | 26 | Maintained              |
| EXS | 27 | Closed/Locked           |
| EXS | 28 | Operational             |
| EXS | 30 | Not Isolated            |
| EXS | 31 | Isolated                |
| EXS | 33 | Ruined                  |
| EXS | 35 | Other                   |
| EXS | 44 | Approximate/About       |
| EXS | 45 | Natural                 |
| EXS | 46 | Man-made                |
| EXS | 47 | Swept                   |
| EXS | 48 | Controlled              |
| EXS | 49 | Non-Controlled          |
| EXS | 50 | Non-Tidal               |
| EXS | 51 | Tidal/Tidal Fluctuation |
| EXS | 52 | Dissipating             |
| EXS | 53 | Incomplete              |
| EXS | 54 | Antique/Ancient         |
| EXS | 55 | Unexamined/Unsurveyed   |
| EXS | 56 | Unattended/Unwatched    |
| EXS | 59 | Not Usable              |
| EXS | 60 | Indefinite (Shoreline)  |

|     |     |                     |
|-----|-----|---------------------|
| EXS | 61  | Definite Shoreline  |
| EXS | 62  | Partially Destroyed |
| EXS | 65  | Inactive            |
| EXS | 998 | Not Applicable      |
| EXS | 999 | Other               |

**FOT**      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

**HGT**      *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT    0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**IMC**      *Internal Material Category*  
Category code for material internal to an object.  

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

**LEN**      *Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN    0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE**      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

**LLL**      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

**LN1**      *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN2**      *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be

rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*LN3*

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*OIT*

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

*RFL*

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER*

*Self Emitter*

Indicates that an object has self heating characteristics

SER T  
SER F

*SMS*

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 20 | Asphalt                  |
| SMS | 21 | Ash                      |
| SMS | 22 | Basalt                   |
| SMS | 23 | Bedrock                  |
| SMS | 24 | Boulders                 |
| SMS | 25 | Calcareous               |
| SMS | 26 | Chalk                    |
| SMS | 27 | Cinders                  |
| SMS | 28 | Cirripedia               |
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 77  | Rubber            |
| SMS | 78  | Rubble            |
| SMS | 79  | Salt              |
| SMS | 80  | Sand              |
| SMS | 81  | Sandstone         |
| SMS | 82  | Schist            |
| SMS | 83  | Spoils/Tailings   |
| SMS | 84  | Scoria            |
| SMS | 85  | Sewage            |
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

|       |             |            |           |          |
|-------|-------------|------------|-----------|----------|
| Units | Format      | Range      | Increment | Max Char |
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*      *Translucency*  
The degree to which a surface is transparent.  

|       |             |              |           |          |
|-------|-------------|--------------|-----------|----------|
| Units | Format      | Range        | Increment | Max Char |
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

**TRV**      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TTP**      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

**TUC**      *Transportation Use Category*  
Identifies the primary user, function, or authority of the transportation system.

|     |     |                                |
|-----|-----|--------------------------------|
| TUC | 0   | Unknown                        |
| TUC | 1   | Both Road and Railroad         |
| TUC | 2   | Highway                        |
| TUC | 3   | Railroad                       |
| TUC | 4   | Road                           |
| TUC | 6   | Street                         |
| TUC | 7   | Through Routes                 |
| TUC | 8   | Air Traffic Control            |
| TUC | 12  | Marine                         |
| TUC | 13  | Air                            |
| TUC | 14  | Bus                            |
| TUC | 17  | Pedestrian                     |
| TUC | 18  | Pipeline                       |
| TUC | 19  | Animal                         |
| TUC | 20  | Aircraft                       |
| TUC | 21  | Ship                           |
| TUC | 22  | Automotive                     |
| TUC | 23  | Boat                           |
| TUC | 24  | Bulk Motor Boat/Barge          |
| TUC | 25  | VALUE INTENTIONALLY LEFT BLANK |
| TUC | 26  | Passenger                      |
| TUC | 27  | Chair lift                     |
| TUC | 28  | Ski tow                        |
| TUC | 29  | Sleigh tow                     |
| TUC | 30  | Cart tow                       |
| TUC | 31  | Motor Cycle                    |
| TUC | 36  | Slip Road/Access Road          |
| TUC | 37  | Portage                        |
| TUC | 38  | Canal                          |
| TUC | 39  | Caravan Route                  |
| TUC | 40  | Subway                         |
| TUC | 999 | Other                          |

**TXT**      *Text Attribute*  
Narrative or other description.  
TXT    0      Actual Value



| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

## USE

### Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |

|     |     |   |
|-----|-----|---|
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

**WID** Width

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**ZV2** Highest Z-value

Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Chars |
|--------|---------------|----------------|-----------|-----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

**Agriculture Feature Class**  
**ID**

**F-Code/Description**

|       |                                |
|-------|--------------------------------|
| AJ010 | Circular Irrigation System     |
| AJ020 | Siphon                         |
| AJ030 | Feed Lot/Stockyard/Holding Pen |
| AJ050 | Windmill                       |
| AJ051 | Windmotor                      |

**ABS** *Absorptivity*

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**ACC** Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

**AOO**      **Angle of Orientation**  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|              |               |  |
|--------------|---------------|--|
| AOO          | 0             | Actual Value                                   |
| <u>Units</u> | <u>Format</u> | <u>Range</u> <u>Increment</u> <u>Max Chars</u> |
| Degrees      | Short Integer | 0-360   1 DEG                                  |

**ATN**      **Aids to Navigation**  
Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

**CCC**      **Color Code Category**

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

**CIC**      **Color Intensity Category**  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

**COC**      **Conspicuous Category**  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

**DFR**      **Diffuse Reflectance**  
Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**DY1**      **Directivity**  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      **Directivity (IR)**  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      **Directivity (Radar)**  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

**EMY**      **Emissivity**  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI*

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS*

*Existence Category*

The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

*FOT*

*Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

# FOT F

**HGT** Height Above Surface Level  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

| HGT    | 0             | Actual Value |           |           |  |
|--------|---------------|--------------|-----------|-----------|--|
| Units  | Format        | Range        | Increment | Max Chars |  |
| Meters | Short Integer | 0±32,767     | 1 M       |           |  |

**IMC** *Internal Material Category*  
Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

**LEN** Length/Diameter of Point Feature  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

| LEN    | 0             | Actual Value |           |           |  |
|--------|---------------|--------------|-----------|-----------|--|
| Units  | Format        | Range        | Increment | Max Chars |  |
| Meters | Short Integer | 0±32,767     | 1 M       |           |  |

**LLE** *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T  
LLE F

**LLL** *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T  
LLL F

**LN1** *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN2** *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN3** *Layer Number (Radar)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be

rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*OIT*

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

*PRO*

*Product Category*

Principal material involved or product resulting from activity at site.

|     |     |                      |
|-----|-----|----------------------|
| PRO | 0   | Unknown              |
| PRO | 5   | Asphalt              |
| PRO | 13  | Chemical             |
| PRO | 22  | Conglomerate         |
| PRO | 26  | Desalinated Water    |
| PRO | 30  | Earthen              |
| PRO | 31  | Electric             |
| PRO | 33  | Explosives           |
| PRO | 35  | Food                 |
| PRO | 38  | Gas                  |
| PRO | 39  | Gasoline             |
| PRO | 50  | Heat                 |
| PRO | 52  | Lava                 |
| PRO | 67  | Oil                  |
| PRO | 69  | Ooze                 |
| PRO | 82  | Radioactive Material |
| PRO | 102 | Sludge               |
| PRO | 116 | Water                |
| PRO | 128 | Refuse               |
| PRO | 130 | None                 |
| PRO | 132 | Not Applicable       |
| PRO | 133 | Telecommunications   |
| PRO | 997 | Not Applicable       |
| PRO | 998 | Multiple             |
| PRO | 999 | Other                |

*RFL*

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER*

*Self Emitter*

Indicates that an object has self heating characteristics

|     |   |
|-----|---|
| SER | T |
| SER | F |

*SMS*

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.



|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 55  | Lead                 |
| SMS | 56  | Loess                |
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

*SPC*

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T  
SPC F

*SS1 Sensors Supported*

*SS2*  
*SS3*

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

**SSC**

**Structure Shape Category**

Geometric form, appearance, or configuration of the feature.

|     |    |                                |
|-----|----|--------------------------------|
| SSC | 0  | Unknown                        |
| SSC | 1  | Barrel, Ton                    |
| SSC | 2  | Blimp                          |
| SSC | 3  | Boat Hull (Float)              |
| SSC | 4  | Bullet                         |
| SSC | 5  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 6  | Conical /Peaked/NUN            |
| SSC | 7  | Cylindrical (Upright)/CAN      |
| SSC | 9  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 10 | Pillar, Spindle                |
| SSC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 12 | Pyramid                        |
| SSC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 14 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 15 | Solid/filled                   |
| SSC | 16 | Spar                           |
| SSC | 17 | Spherical (Hemispherical)      |
| SSC | 18 | Truss                          |
| SSC | 19 | With Radome                    |
| SSC | 20 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 21 | Artificial Mountain            |
| SSC | 22 | Crescent                       |
| SSC | 23 | Ferris Wheel                   |
| SSC | 24 | Enclosed                       |
| SSC | 25 | Roller coaster                 |
| SSC | 26 | Lateral                        |
| SSC | 27 | Mounds                         |
| SSC | 28 | Ripple                         |
| SSC | 29 | Star                           |
| SSC | 30 | Transverse                     |
| SSC | 31 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 33 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 34 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 35 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 36 | Windmotor                      |
| SSC | 38 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 40 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 46 | Open                           |
| SSC | 52 | 'A' Frame                      |
| SSC | 53 | 'H' Frame                      |
| SSC | 54 | 'T' Frame                      |
| SSC | 56 | 'Y' Frame                      |

|     |     |                                   |
|-----|-----|-----------------------------------|
| SSC | 57  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 58  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 59  | Telescoping Gasholder (Gasometer) |
| SSC | 60  | Mast                              |
| SSC | 61  | Tripod                            |
| SSC | 62  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 63  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 65  | Cylindrical with flat top         |
| SSC | 66  | Cylindrical with domed top        |
| SSC | 71  | Cylindrical/Peaked                |
| SSC | 73  | Superbuoy                         |
| SSC | 74  | T' Frame                          |
| SSC | 75  | Tetrahedron                       |
| SSC | 76  | Funnel                            |
| SSC | 77  | Arch                              |
| SSC | 78  | Multi-Arch                        |
| SSC | 79  | Round                             |
| SSC | 80  | Rectangular                       |
| SSC | 81  | Dragons Teeth                     |
| SSC | 82  | I-Beam                            |
| SSC | 83  | Square                            |
| SSC | 84  | Irregular                         |
| SSC | 85  | Diamond Shaped Buoy               |
| SSC | 86  | Oval                              |
| SSC | 87  | Dome                              |
| SSC | 107 | Tower                             |
| SSC | 108 | Scanner                           |
| SSC | 109 | Obelisk                           |
| SSC | 999 | Other                             |

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*

*Translucency*

The degree to which a surface is transparent.

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*

*Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP*

*Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

|       |  |              |                                    |          |  |
|-------|--|--------------|------------------------------------|----------|--|
| TXT   | Text Attribute   |              |                                    |          |  |
|       | Narrative or other description.  |              |                                    |          |  |
| TXT   | 0  | Actual Value |                                    |          |  |
| Units | Format   | Range        | Increment                          | Max Char |  |
|       | Text String  | Lexical      |                                    | 256      |  |
| USE   | Usage  |              |                                    |          |  |
|       | Use (identifies the primary user, function, or controlling authority). |              |                                    |          |  |
|       | USE  | 0            | Unknown                            |          |  |
|       | USE  | 4            | National                           |          |  |
|       | USE  | 5            | State                              |          |  |
|       | USE  | 6            | Private                            |          |  |
|       | USE  | 7            | Tribal                             |          |  |
|       | USE  | 8            | Military                           |          |  |
|       | USE  | 10           | Other                              |          |  |
|       | USE  | 11           | Motel/Hotel                        |          |  |
|       | USE  | 12           | Apartment                          |          |  |
|       | USE  | 13           | Open                               |          |  |
|       | USE  | 14           | VALUE INTENTIONALLY LEFT BLANK     |          |  |
|       | USE  | 15           | VALUE INTENTIONALLY LEFT BLANK     |          |  |
|       | USE  | 16           | City                               |          |  |
|       | USE  | 17           | Advertising Billboard              |          |  |
|       | USE  | 18           | Scoreboard                         |          |  |
|       | USE  | 19           | Highway Sign                       |          |  |
|       | USE  | 20           | Closed                             |          |  |
|       | USE  | 21           | Restricted                         |          |  |
|       | USE  | 22           | Joint Military/Civilian            |          |  |
|       | USE  | 23           | International                      |          |  |
|       | USE  | 24           | Unidentified Aircraft Landing Area |          |  |
|       | USE  | 25           | Federal                            |          |  |
|       | USE  | 26           | Primary/1st Order                  |          |  |
|       | USE  | 30           | Secondary/2nd Order                |          |  |
|       | USE  | 31           | Tertiary/3rd Order                 |          |  |
|       | USE  | 32           | Insular                            |          |  |
|       | USE  | 33           | Provincial                         |          |  |
|       | USE  | 37           | Interstate                         |          |  |
|       | USE  | 41           | Industrial                         |          |  |
|       | USE  | 42           | Commercial                         |          |  |
|       | USE  | 43           | Institutional                      |          |  |
|       | USE  | 44           | Residential                        |          |  |
|       | USE  | 45           | Agricultural                       |          |  |
|       | USE  | 48           | Decoy                              |          |  |
|       | USE  | 49           | Civilian/Public                    |          |  |
|       | USE  | 50           | Limited                            |          |  |
|       | USE  | 51           | Telegraph                          |          |  |
|       | USE  | 52           | Telephone                          |          |  |
|       | USE  | 53           | Power                              |          |  |
|       | USE  | 57           | Marine                             |          |  |
|       | USE  | 60           | Avalanche                          |          |  |
|       | USE  | 61           | Refugee                            |          |  |
|       | USE  | 62           | Prisoner                           |          |  |
|       | USE  | 68           | Animal sanctuary                   |          |  |
|       | USE  | 69           | Levee/Dike                         |          |  |
|       | USE  | 70           | Reserve/Reservation                |          |  |

|     |     |   |
|-----|-----|---|
| USE | 73  | Terminus/Terminal                         |
| USE | 74  | Low Altitude enroute                      |
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 130 | Transportation                |
| USE | 132 | Container                     |
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

**WID**      Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| WID          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

**ZV2**      Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|              |               |                |                  |                  |  |
|--------------|---------------|----------------|------------------|------------------|--|
| ZV2          | 0             | Actual Value   |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | -400 to 30,000 | 1 M              |                  |  |

#### Industry Void Collection Area Feature Class

**ID**

**F-CODE/DESCRIPTION**

ZD020 Void Collection Area

**VCA**      Void Collection Attribute  
Reason data is not collected.

|     |     |  |
|-----|-----|--|
| VCA | 0   | Unknown                                      |
| VCA | 1   | Data Not Requested By User                   |
| VCA | 2   | Area Too Rough to Collect                    |
| VCA | 3   | No Available Imagery                         |
| VCA | 4   | Different Height Threshold Within Data Block |
| VCA | 5   | Low Data Collection Criteria                 |
| VCA | 6   | No Available Map Source                      |
| VCA | 7   | No Suitable Imagery                          |
| VCA | 8   | Data Not Required                            |
| VCA | 999 | Other  |

## Appendix H. Physical Geography Coverage

### Above Surface Landforms Feature Class

ID

#### F-CODE/DESCRIPTION

DB010 Bluff/Cliff/Escarpment  
 DB030 Hill - A small, isolated elevation, smaller than a mountain.  
 DB090 Embankment/Fill  
 DB501 Topline of cliff - Topline of a steep slope.  
 DB170 Sand Dune/Sand Hills  
 DB100 Esker  
 DB180 Volcano  
 DB190 Volcanic Dike

ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units      | Format | Range      | Increment | Max Char |
|------------|--------|------------|-----------|----------|
| Real(f7.6) |        | 0.0 .. 1.0 |           |          |

AOO

#### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO 0 Actual Value

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

ARA

#### Area Coverage Attribute

The absolute area within the delineation of the feature.

ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

ATN

#### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

ATN 0 Unknown  
 ATN 1 Marked  
 ATN 2 Unmarked  
 ATN 3 Lit  
 ATN 4 Unlit  
 ATN 999 Other

CCC

#### Color Code Category

CCC 0 Unknown/Not applicable  
 CCC 1 Black  
 CCC 2 Blue  
 CCC 3 Brown  
 CCC 4 Gray  
 CCC 5 Green  
 CCC 7 Chocolate



|     |     |               |
|-----|-----|---------------|
| CCC | 9   | Orange        |
| CCC | 12  | Red           |
| CCC | 14  | Violet        |
| CCC | 15  | White         |
| CCC | 19  | Yellow        |
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

CET Identifies the number of sides that are used as a cut or an embankment.

|     |     |            |
|-----|-----|------------|
| CET | 0   | Unknown    |
| CET | 1   | One Side   |
| CET | 2   | Both Sides |
| CET | 999 | Other      |

CIC Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

CDV Date  
The calendar date as specified by ISO 8601.

|       |   |   |
|-------|---|---|
| CDV   | 0 | Actual Value                            |
| Units |   | <u>Format Range Increment Max Chars</u> |

|            |  |               |                    |                  |                 |
|------------|--|---------------|--------------------|------------------|-----------------|
|            | Text String  | ASCII Text    | 8 Digits           |                  |                 |
| <i>DFR</i> | <i>Diffuse Reflectance</i><br>Radar backscatter coefficient, expressed as a ratio  |               |                    |                  |                 |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>       | <u>Increment</u> | <u>Max Char</u> |
|            |  | Real(f7.6)    | 0.0 .. 1.0         |                  |                 |
| <i>DY1</i> | <i>Directivity</i><br>Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).   |               |                    |                  |                 |
|            | DY1  | 0             | Unknown            |                  |                 |
|            | DY1  | 1             | Uni                |                  |                 |
|            | DY1  | 2             | Bi                 |                  |                 |
|            | DY1  | 3             | Omni               |                  |                 |
|            | DY1  | 999           | Other              |                  |                 |
| <i>DY2</i> | <i>Directivity (IR)</i><br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |               |                    |                  |                 |
|            | DY2  | 0             | Unknown            |                  |                 |
|            | DY2  | 1             | Uni                |                  |                 |
|            | DY2  | 2             | Bi                 |                  |                 |
|            | DY2  | 3             | Omni               |                  |                 |
|            | DY2  | 999           | Other              |                  |                 |
| <i>DY3</i> | <i>Directivity (Radar)</i><br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).   |               |                    |                  |                 |
|            | DY3  | 0             | Unknown            |                  |                 |
|            | DY3  | 1             | Uni                |                  |                 |
|            | DY3  | 2             | Bi                 |                  |                 |
|            | DY3  | 3             | Omni               |                  |                 |
|            | DY3  | 999           | Other              |                  |                 |
| <i>EMY</i> | <i>Emissivity</i><br>Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature. |               |                    |                  |                 |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>       | <u>Increment</u> | <u>Max Char</u> |
|            |  | Real (f7.6)   | 0.0 .. 1.0         |                  |                 |
| <i>EXI</i> | <i>Exitance</i><br>Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm <sup>2</sup> .   |               |                    |                  |                 |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>       | <u>Increment</u> | <u>Max Char</u> |
|            |  | Real          | 0.0 .. 1.93428E+25 |                  |                 |
| <i>EXS</i> | <i>Existence Category</i><br>The state or condition of the feature.  |               |                    |                  |                 |
|            | EXS  | 0             | Unknown            |                  |                 |
|            | EXS  | 1             | Definite           |                  |                 |
|            | EXS  | 2             | Doubtful           |                  |                 |
|            | EXS  | 3             | Reported           |                  |                 |
|            | EXS  | 30            | Not Isolated       |                  |                 |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

#### FEO

##### Feature Element Orientation

The angular distance measured from true north (0 deg) clockwise to the predominant linear pattern of the elements within a feature.

FEO 0 Actual Value

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-359 | 1 DEG     |           |

#### FOT

##### Feature Onset

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

#### FSC

##### Feature Shape Category

Geometric form, appearance, or configuration of the feature.

|     |    |                           |
|-----|----|---------------------------|
| FSC | 0  | Unknown                   |
| FSC | 6  | Conical /Peaked/NUN       |
| FSC | 7  | Cylindrical (Upright)/CAN |
| FSC | 12 | Pyramid                   |
| FSC | 15 | Solid/filled              |
| FSC | 16 | Spar                      |
| FSC | 17 | Spherical (Hemispherical) |
| FSC | 18 | Truss                     |
| FSC | 19 | With Radome               |
| FSC | 21 | Artificial Mountain       |
| FSC | 22 | Crescent                  |
| FSC | 26 | Lateral                   |
| FSC | 27 | Mounds                    |
| FSC | 28 | Ripple                    |
| FSC | 29 | Star                      |
| FSC | 30 | Transverse                |
| FSC | 46 | Open                      |
| FSC | 65 | Cylindrical with flat top |

|     |     |                            |
|-----|-----|----------------------------|
| FSC | 66  | Cylindrical with domed top |
| FSC | 71  | Cylindrical/Peaked         |
| FSC | 75  | Tetrahedron                |
| FSC | 76  | Funnel                     |
| FSC | 77  | Arch                       |
| FSC | 78  | Multi-Arch                 |
| FSC | 79  | Round                      |
| FSC | 80  | Rectangular                |
| FSC | 81  | Dragons Teeth              |
| FSC | 82  | I-Beam                     |
| FSC | 83  | Square                     |
| FSC | 84  | Irregular                  |
| FSC | 86  | Oval                       |
| FSC | 87  | Dome                       |
| FSC | 107 | Tower                      |
| FSC | 109 | Obelisk                    |
| FSC | 999 | Other                      |

**HGT**      *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT    0      Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**IMC**      *Internal Material Category*  
Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

**LEN**      *Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN    0      Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE**      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T  
LLE F

**LLL**      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.

LLL T  
LLL F

**LNI**      *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range | Increment  | Max Char |
|-------|---------|-------|------------|----------|
|       | Integer | 0..   | 2147483647 |          |

LN2

*Layer Number (IR)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range | Increment  | Max Char |
|-------|---------|-------|------------|----------|
|       | Integer | 0..   | 2147483647 |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range | Increment  | Max Char |
|-------|---------|-------|------------|----------|
|       | Integer | 0..   | 2147483647 |          |

NAM

*Name*

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

PFH

*Predominant Feature Height*

Predominant height within delineation of feature.

PFH 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

RFL

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SER

*Self Emitter*

Indicates that an object has self heating characteristics

SER T  
SER F

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

SMS 0 Unknown

|     |    |   |
|-----|----|---|
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flysch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

# SPC F

## SS1 Sensors Supported

SS2

SS3

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

## TMR Texture Map Reflectance

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

## TRL Translucency

The degree to which a surface is transparent.

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

## TRV Transmissivity

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

## TTP Texture Type

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

## TXT Text Attribute

Narrative or other description.

TXT 0 Actual Value

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

## USE Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                       |
|-----|----|-----------------------|
| USE | 0  | Unknown               |
| USE | 4  | National              |
| USE | 5  | State                 |
| USE | 6  | Private               |
| USE | 7  | Tribal                |
| USE | 8  | Military              |
| USE | 10 | Other                 |
| USE | 11 | Motel/Hotel           |
| USE | 12 | Apartment             |
| USE | 13 | Open                  |
| USE | 16 | City                  |
| USE | 17 | Advertising Billboard |
| USE | 18 | Scoreboard            |



|     |    |                                    |
|-----|----|------------------------------------|
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |
| USE | 85 | Initial Approach Fix               |
| USE | 86 | Final Approach Fix                 |
| USE | 87 | Visual Descent Point               |
| USE | 88 | Missed Approach Point              |
| USE | 89 | Radar                              |
| USE | 90 | Mileage Break Down                 |
| USE | 91 | NAVAID Changeover                  |
| USE | 92 | Altimeter Change                   |
| USE | 93 | Compulsory Reporting Points        |
| USE | 94 | Non-Compulsory Reporting Points    |
| USE | 95 | Alert Apron/Hardstand              |

|     |     |   |
|-----|-----|---|
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

VAL

Value

Generic numeric (integer) value.

VAL 0 Actual Value

| Units | Format | Range | Increment | Max Chars |
|-------|--------|-------|-----------|-----------|
|-------|--------|-------|-----------|-----------|

Numeric      Short Integer      ±32,767      Unity

ZV2      Highest Z-value  
 Elevation above a given datum to the highest portion of the feature.  
 ZV2      0      Actual Value  

| Units  | Format        | Range          | Increment | Max Chars |
|--------|---------------|----------------|-----------|-----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

# Surface Landforms Feature Class

ID

## F-CODE/DESCRIPTION

DB115 Geothermal Feature  
 DB160 Rock Strata/Rock Formation  
 DB176 Slope Category - An area enclosing a group of slope values falling within a set range.  
 DB210 US Potential Landslide Area  
 DB211 Landslide - The mass of earth or rock which has slipped down from a mountain or cliff.  
 DB230 Fan - A gently sloping fan shaped feature usually found near the lower termination of a canyon.  
 BH150 Salt Pan - A flat area of natural surface salt deposits.

ABS      *Absorptivity*  
 Ratio of radiant (thermal) energy to the energy incident upon it.  

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC      Accuracy Category  
 Accuracy of geographic position.  
 ACC      0      Unknown  
 ACC      1      Accurate  
 ACC      2      Approximate  
 ACC      3      Doubtful  
 ACC      5      Disputed  
 ACC      6      Undisputed  
 ACC      7      Precise  
 ACC      8      Abrogated

AOO      Angle of Orientation  
 The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.  
 AOO      0      Actual Value  

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

CCC      Color Code Category  
 CCC      0      Unknown/Not applicable  
 CCC      1      Black  
 CCC      2      Blue  
 CCC      3      Brown  
 CCC      4      Gray

|     |     |               |
|-----|-----|---------------|
| CCC | 5   | Green         |
| CCC | 7   | Chocolate     |
| CCC | 9   | Orange        |
| CCC | 12  | Red           |
| CCC | 14  | Violet        |
| CCC | 15  | White         |
| CCC | 19  | Yellow        |
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

CIC      Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC      Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

DFR      *Diffuse Reflectance*  
Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1      *Directivity*  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |   |         |
|-----|---|---------|
| DY1 | 0 | Unknown |
|-----|---|---------|

|     |     |       |
|-----|-----|-------|
| DY1 | 1   | Uni   |
| DY1 | 2   | Bi    |
| DY1 | 3   | Omni  |
| DY1 | 999 | Other |

*DY2*      *Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

*DY3*      *Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY*      *Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI*      *Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS*      *Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 11 | Temporary          |
| EXS | 12 | Alternate          |
| EXS | 18 | Permanent          |
| EXS | 30 | Not Isolated       |
| EXS | 31 | Isolated           |
| EXS | 33 | Ruined             |
| EXS | 35 | Other              |
| EXS | 44 | Approximate/About  |
| EXS | 45 | Natural            |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

*FOT Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*HYC Hydrological Category*  
Identifies the annual water content of the feature.  
HYC 0 Unknown  
HYC 2 Not Applicable  
HYC 3 Dry  
HYC 6 Non-Perennial /Intermittent /Fluctuating  
HYC 8 Perennial /Permanent  
HYC 999 Other

*IMC Internal Material Category*  
Category code for material internal to an object.  

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

*LEN Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0 Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

*LLE Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

*LLL Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features

LLL T  
LLL F

LN1

*Layer Number*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2

*Layer Number (IR)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LOC

*Location Category*

Status of feature relative to surrounding area or water.

|     |    |   |
|-----|----|---|
| LOC | 0  | Unknown                                       |
| LOC | 1  | Above Surface/Does not Cover (Height Known)   |
| LOC | 2  | Awash at Chart Datum                          |
| LOC | 3  | Dries/Covers (Height Unknown)                 |
| LOC | 4  | Below Surface /Submerged/Underground          |
| LOC | 5  | Covered < 20 Meters                           |
| LOC | 6  | Covered ≥ 20 Meters but < 30 Meters           |
| LOC | 7  | Covered ≥30 Meters                            |
| LOC | 8  | On Ground Surface                             |
| LOC | 9  | Depth Known                                   |
| LOC | 10 | Depth Known ( Cleared by Drag Wire)           |
| LOC | 11 | Depth Unknown But Safe to Depth Shown         |
| LOC | 12 | VALUE INTENTIONALLY LEFT BLANK                |
| LOC | 13 | Hull Showing                                  |
| LOC | 14 | Masts Showing                                 |
| LOC | 15 | On Water Surface/Floating                     |
| LOC | 16 | Partially Submerged                           |
| LOC | 17 | Sunken/on sea bottom                          |
| LOC | 19 | Above Surface/Does not Cover (Height Unknown) |
| LOC | 20 | Funnel Showing                                |
| LOC | 21 | Superstructure showing                        |
| LOC | 22 | Off Shore                                     |
| LOC | 23 | Below sea bottom                              |
| LOC | 24 | Suspended or elevated above sea bottom        |

|     |     |   |
|-----|-----|---|
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

**NAM** Name

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

**OIT** *Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

OIT 1 SELF

OIT 2 SUN

OIT 3 NOSUN

**RFL** *Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**RKF** Rock Strata Formation

The structure of a rock formation.

RKF 0 Unknown

RKF 1 Columnar

RKF 2 Needle

RKF 3 Pinnacle

RKF 4 VALUE INTENTIONALLY LEFT BLANK

RKF 5 VALUE INTENTIONALLY LEFT BLANK

RKF 999 Other

**SER** *Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

**SMS** *Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

SMS 0 Unknown



|     |    |   |
|-----|----|---|
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

# SPC F

## SRD

### Surface Roughness Description

Describes the condition of the surface materials that may be used for mobility prediction, construction material, and landing sites.

|     |    |   |
|-----|----|---|
| SRD | 0  | Unknown   |
| SRD | 1  | No surface roughness effect                                 |
| SRD | 2  | Area of high landslide potential                            |
| SRD | 3  | Uncohesive surface material/flat                            |
| SRD | 4  | Rough   |
| SRD | 5  | Angular   |
| SRD | 6  | Rounded   |
| SRD | 11 | Surface of numerous cobbles and boulders                    |
| SRD | 12 | Areas of stony terrain                                      |
| SRD | 13 | Stony soil with surface rock                                |
| SRD | 14 | Stony soil with scattered boulders                          |
| SRD | 15 | Stony soil with numerous boulders                           |
| SRD | 16 | Numerous boulders   |
| SRD | 17 | Numerous rock outcrops and/or stony soil                    |
| SRD | 18 | Area of scattered boulders                                  |
| SRD | 19 | Talus slope   |
| SRD | 20 | Boulder Fields  |
| SRD | 31 | Highly fractured rock surface                               |
| SRD | 32 | Weathered lava flows  |
| SRD | 33 | Unweathered lava flows                                      |
| SRD | 34 | Stony soil with numerous rock outcrops                      |
| SRD | 35 | Irregular surface with deep fractures of foliation          |
| SRD | 36 | Rugged terrain with numerous rock outcrops                  |
| SRD | 37 | Rugged bedrock surface                                      |
| SRD | 38 | Sand dunes  |
| SRD | 39 | Sand dunes / low  |
| SRD | 40 | Sand dunes/ high  |
| SRD | 41 | Active sand dunes   |
| SRD | 42 | Stabilized sand dunes                                       |
| SRD | 43 | Highly distorted area, sharp rocky ridges                   |
| SRD | 51 | Stony soil cut by numerous gullies                          |
| SRD | 52 | Moderately dissected terrain                                |
| SRD | 53 | Moderately dissected terrain with scattered rock outcrops   |
| SRD | 54 | Dissected floodplain  |
| SRD | 55 | Highly dissected terrain                                    |
| SRD | 56 | Area with deep erosional gullies                            |
| SRD | 57 | Steep, rugged, dissected terrain with narrow gullies        |
| SRD | 58 | Karst/areas of numerous sinkholes and solution valleys      |
| SRD | 59 | Karst/area of numerous sinkholes                            |
| SRD | 60 | Karst/hummocky terrain covered with large conical hills     |
| SRD | 61 | Karst/hummocky terrain covered with low, broad-based mounds |
| SRD | 62 | Arroyo/wadi/wash  |
| SRD | 63 | Playa/dry lake  |
| SRD | 64 | Area of numerous meander scars and/or oxbow lakes           |
| SRD | 65 | Solifluction lobes and frost scars                          |
| SRD | 66 | Hummocky ground, areas of frost heaving                     |
| SRD | 67 | Area of frost polygons                                      |
| SRD | 68 | Area containing sabkhas                                     |

|     |    |   |
|-----|----|---|
| SRD | 69 | Area of numerous small lakes and ponds          |
| SRD | 70 | Area of numerous crevasses                      |
| SRD | 81 | Area of numerous terraces                       |
| SRD | 82 | Quarries  |
| SRD | 83 | Strip mines                                     |
| SRD | 84 | Quarry/gravel pit                               |
| SRD | 85 | Quarry/sand pit                                 |
| SRD | 86 | Mine tailings/waste piles                       |
| SRD | 87 | Salt evaporators                                |
| SRD | 88 | Area of numerous dikes                          |
| SRD | 89 | Area of numerous diked fields                   |
| SRD | 90 | Area of numerous fences                         |
| SRD | 91 | Area of numerous stone walls                    |
| SRD | 92 | Area of numerous man-made canals/drains/ditches |
| SRD | 93 | Area of numerous terraced fields                |
| SRD | 94 | Parallel earthen mounds (row crops)             |
| SRD | 95 | Area of numerous hedgerows                      |

#### *SRT*

#### *Surface Type*

This is a composite attribute (MCC, STP and SMC from the Digest)  
Soils described by the Unified Soil Classification System (USCS) or primary  
material composition.

|     |    |   |
|-----|----|---|
| SRT | 0  | Unknown   |
| SRT | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SRT | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SRT | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SRT | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SRT | 5  | SW Well graded sand or gravelly sands                 |
| SRT | 6  | SP Poorly graded sands or gravelly sands              |
| SRT | 7  | SM Silty sands, sand-silt mixture.                    |
| SRT | 8  | SC Clayey sands, sand-clay mixtures                   |
| SRT | 9  | ML Inorganic silts and very fine sands                |
| SRT | 10 | CL Inorganic clays of low to medium plasticity        |
| SRT | 11 | OL Organic silts and organic silty clays              |
| SRT | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SRT | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SRT | 14 | OH Organic clays of medium to high plasticity         |
| SRT | 15 | PT Peat and other highly organic soils                |
| SRT | 17 | ML-CL Soil type having both ML and CL characteristics |
| SRT | 18 | Evaporites  |
| SRT | 19 | Alkali  |
| SRT | 20 | Asphalt   |
| SRT | 21 | Ash   |
| SRT | 22 | Basalt  |
| SRT | 23 | Bedrock   |
| SRT | 24 | Boulders  |
| SRT | 25 | Calcareous  |
| SRT | 26 | Chalk   |
| SRT | 27 | Cinders   |
| SRT | 28 | Cirripedia  |
| SRT | 29 | Clay  |
| SRT | 30 | Coal  |
| SRT | 31 | Cobble  |
| SRT | 32 | Coke  |

|     |    |                          |
|-----|----|--------------------------|
| SRT | 33 | Composition              |
| SRT | 34 | Conglomerate             |
| SRT | 35 | Copper                   |
| SRT | 36 | Coral                    |
| SRT | 37 | Coral Head               |
| SRT | 38 | Diamonds                 |
| SRT | 39 | Diatoms                  |
| SRT | 40 | Dolomite                 |
| SRT | 41 | Flynch                   |
| SRT | 42 | Foraminifera             |
| SRT | 43 | Fucus                    |
| SRT | 44 | Glass                    |
| SRT | 45 | Globigerina              |
| SRT | 46 | Gold                     |
| SRT | 47 | Granite                  |
| SRT | 48 | INTENTIONALLY LEFT BLANK |
| SRT | 49 | Gravel                   |
| SRT | 50 | Green Rocks              |
| SRT | 51 | Ground (Shells)          |
| SRT | 52 | Iron                     |
| SRT | 53 | Lava                     |
| SRT | 55 | Lead                     |
| SRT | 56 | Loess                    |
| SRT | 57 | Lumber                   |
| SRT | 58 | Macadam                  |
| SRT | 59 | Madrepores               |
| SRT | 60 | Manganese                |
| SRT | 61 | Marble                   |
| SRT | 62 | Marl                     |
| SRT | 63 | Mattes                   |
| SRT | 64 | Mud                      |
| SRT | 65 | Oil                      |
| SRT | 66 | Oil Blister              |
| SRT | 67 | Ooze                     |
| SRT | 70 | Pebbles                  |
| SRT | 71 | Pumice                   |
| SRT | 72 | Quartz                   |
| SRT | 73 | Radiolaria               |
| SRT | 74 | Radioactive Material     |
| SRT | 75 | Reinforced Concrete      |
| SRT | 76 | Rock/Rocky               |
| SRT | 77 | Rubber                   |
| SRT | 78 | Rubble                   |
| SRT | 79 | Salt                     |
| SRT | 80 | Sand                     |
| SRT | 81 | Sandstone                |
| SRT | 82 | Schist                   |
| SRT | 83 | Spoils/Tailings          |
| SRT | 84 | Scoria                   |
| SRT | 85 | Sewage                   |
| SRT | 86 | Shells                   |
| SRT | 87 | Shingle                  |
| SRT | 88 | Silt                     |
| SRT | 89 | Silver                   |

|     |     |                   |
|-----|-----|-------------------|
| SRT | 90  | Slag              |
| SRT | 91  | Sludge            |
| SRT | 92  | Snow/Ice          |
| SRT | 93  | Steel             |
| SRT | 94  | Stone             |
| SRT | 95  | Travertin         |
| SRT | 96  | Tufa              |
| SRT | 97  | Uranium           |
| SRT | 98  | Volcanic          |
| SRT | 99  | Volcanic Ash      |
| SRT | 100 | Zinc              |
| SRT | 101 | Distorted surface |
| SRT | 102 | Sand and gravel   |
| SRT | 103 | Rip-Rap           |
| SRT | 104 | Kelp              |
| SRT | 105 | Sandwaves         |
| SRT | 500 | Not Evaluated     |
| SRT | 999 | Other             |

*SS1 Sensors Supported*

*SS2*

*SS3*

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*SWT*

*Well/Spring Type*

Identifies the type of spring or water-hole.

|     |     |                  |
|-----|-----|------------------|
| SWT | 0   | Unknown          |
| SWT | 1   | Geyser           |
| SWT | 2   | Hot Spring       |
| SWT | 3   | Fumarole         |
| SWT | 4   | Artesian         |
| SWT | 5   | Water Hole       |
| SWT | 6   | Walled-In Spring |
| SWT | 999 | Other            |

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              |               | Real (f7.6)  | 0.0 .. 1.0       |                 |

*TRL*

*Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              |               | Real (f7.3)  | 0.0 .. 100.0     |                 |

*TRV*

*Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              |               | Real (f7.6)  | 0.0 .. 1.0       |                 |

|     |  |                                    |         |           |          |
|-----|--|------------------------------------|---------|-----------|----------|
| TTP | Texture Type   |                                    |         |           |          |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC). |                                    |         |           |          |
| TTP | 1  | RGB                                |         |           |          |
| TTP | 2  | GRAY                               |         |           |          |
| TTP | 3  | MULTI                              |         |           |          |
| TTP | 4  | SMFD                               |         |           |          |
| TXT | Text Attribute   |                                    |         |           |          |
|     | Narrative or other description.  |                                    |         |           |          |
| TXT | 0  | Actual Value                       |         |           |          |
|     | Units  | Format                             | Range   | Increment | Max Char |
|     |  | Text String                        | Lexical |           | 256      |
| USE | Usage  |                                    |         |           |          |
|     | Use (identifies the primary user, function, or controlling authority).                 |                                    |         |           |          |
| USE | 0  | Unknown                            |         |           |          |
| USE | 4  | National                           |         |           |          |
| USE | 5  | State                              |         |           |          |
| USE | 6  | Private                            |         |           |          |
| USE | 7  | Tribal                             |         |           |          |
| USE | 8  | Military                           |         |           |          |
| USE | 10   | Other                              |         |           |          |
| USE | 11   | Motel/Hotel                        |         |           |          |
| USE | 12   | Apartment                          |         |           |          |
| USE | 13   | Open                               |         |           |          |
| USE | 16   | City                               |         |           |          |
| USE | 17   | Advertising Billboard              |         |           |          |
| USE | 18   | Scoreboard                         |         |           |          |
| USE | 19   | Highway Sign                       |         |           |          |
| USE | 20   | Closed                             |         |           |          |
| USE | 21   | Restricted                         |         |           |          |
| USE | 22   | Joint Military/Civilian            |         |           |          |
| USE | 23   | International                      |         |           |          |
| USE | 24   | Unidentified Aircraft Landing Area |         |           |          |
| USE | 25   | Federal                            |         |           |          |
| USE | 26   | Primary/1st Order                  |         |           |          |
| USE | 30   | Secondary/2nd Order                |         |           |          |
| USE | 31   | Tertiary/3rd Order                 |         |           |          |
| USE | 32   | Insular                            |         |           |          |
| USE | 33   | Provincial                         |         |           |          |
| USE | 37   | Interstate                         |         |           |          |
| USE | 41   | Industrial                         |         |           |          |
| USE | 42   | Commercial                         |         |           |          |
| USE | 43   | Institutional                      |         |           |          |
| USE | 44   | Residential                        |         |           |          |
| USE | 45   | Agricultural                       |         |           |          |
| USE | 48   | Decoy                              |         |           |          |
| USE | 49   | Civilian/Public                    |         |           |          |
| USE | 50   | Limited                            |         |           |          |
| USE | 51   | Telegraph                          |         |           |          |
| USE | 52   | Telephone                          |         |           |          |
| USE | 53   | Power                              |         |           |          |
| USE | 57   | Marine                             |         |           |          |

|     |     |   |
|-----|-----|---|
| USE | 60  | Avalanche                                 |
| USE | 61  | Refugee                                   |
| USE | 62  | Prisoner                                  |
| USE | 68  | Animal sanctuary                          |
| USE | 69  | Levee/Dike                                |
| USE | 70  | Reserve/Reservation                       |
| USE | 73  | Terminus/Terminal                         |
| USE | 74  | Low Altitude enroute                      |
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |



|     |     |                               |
|-----|-----|-------------------------------|
| USE | 123 | Tourist                       |
| USE | 124 | Irrigation                    |
| USE | 125 | Retaining                     |
| USE | 127 | as a causeway                 |
| USE | 128 | Mixed Urban or built-up Land  |
| USE | 129 | Military District             |
| USE | 130 | Transportation                |
| USE | 132 | Container                     |
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

|            |   |   |          |           |           |  |
|------------|---|---|----------|-----------|-----------|--|
| WD3        |   | Military Gap Width<br>The minimum horizontal bridging distance between banks (in decimeters). |          |           |           |  |
| WD3        | 0 | Actual Value  |          |           |           |  |
| Units      |   | Format  | Range    | Increment | Max Chars |  |
| Decimeters |   | Short Integer   | 0±32,767 | 1 DM      |           |  |

|        |   |  |          |           |           |  |
|--------|---|--|----------|-----------|-----------|--|
| WID    |   | Width<br>A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |          |           |           |  |
| WID    | 0 | Actual Value   |          |           |           |  |
| Units  |   | Format   | Range    | Increment | Max Chars |  |
| Meters |   | Short Integer  | 0±32,767 | 1 M       |           |  |

**Below Surface Landforms Feature Class**  
**ID**

|                    |  |
|--------------------|--|
| F-CODE/DESCRIPTION |  |
| DB030              | Cave   |
| DB110              | Fault  |
| DB060              | Crevice/Crevasse   |
| DB070              | Cut  |
| DB080              | Depression - A low area surrounded by higher ground.   |
| DB200              | Gully/Gorge  |
| BH160              | Sebkha - A natural depression in arid or semi-arid regions whose bed is covered with salt encrusted clayey soil. |
| DB500              | Bottomline of cliff - Bottomline of a steep slope.   |

ABS

Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

AOO

Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| AOO     | 0             | Actual Value |           |           |
|---------|---------------|--------------|-----------|-----------|
| Units   | Format        | Range        | Increment | Max Chars |
| Degrees | Short Integer | 0-360        | 1 DEG     |           |

BGL

Bank Gradient Left

Slope of the left bank (facing downstream) above water level.

| BGL     | 0             | Actual Value |           |           |
|---------|---------------|--------------|-----------|-----------|
| Units   | Format        | Range        | Increment | Max Chars |
| Percent | Short integer | ±90          | 1 %       |           |

BGR

Bank Gradient Right

Slope of the right bank (facing downstream) above water level.

| BGR     | 0             | Actual Value |           |           |
|---------|---------------|--------------|-----------|-----------|
| Units   | Format        | Range        | Increment | Max Chars |
| Percent | Short integer | ±901         | %         |           |

BHL

Bank Height Left

Height of the left bank above the water level (facing downstream) to the average water level.

| BHL       | 0             | Actual Value |           |           |
|-----------|---------------|--------------|-----------|-----------|
| Units     | Format        | Range        | Increment | Max Chars |
| Decimeter | Short integer | 0±32,767     | 1 DM      |           |

BHR

Bank Height Right

Height of the right bank above the water level (facing downstream) to the average water level.

| BHL       | 0             | Actual Value |           |           |
|-----------|---------------|--------------|-----------|-----------|
| Units     | Format        | Range        | Increment | Max Chars |
| Decimeter | Short integer | 0±32,767     | 1 DM      |           |

BVL

Bank Vegetation Left

Density of vegetation found on the downstream left bank.

|     |   |                        |  |  |
|-----|---|------------------------|--|--|
| BVL | 0 | Unknown                |  |  |
| BVL | 1 | Open (≤5%)             |  |  |
| BVL | 2 | Sparse (>5% and ≤15%)  |  |  |
| BVL | 3 | Medium (>15% and ≤50%) |  |  |
| BVL | 4 | Dense (>50%)           |  |  |

BVR

Bank Vegetation Right

Density of vegetation found on the downstream right bank.

|     |   |                       |  |  |
|-----|---|-----------------------|--|--|
| BVL | 0 | Unknown               |  |  |
| BVL | 1 | Open (≤5%)            |  |  |
| BVL | 2 | Sparse (>5% and ≤15%) |  |  |

|     |   |                         |
|-----|---|-------------------------|
| BVL | 3 | Medium (>15% and ≤ 50%) |
| BVL | 4 | Dense (>50%)            |

CCC      Color Code Category

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

CIC      Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC      Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |    |                                |
|-----|----|--------------------------------|
| COC | 0  | Unknown                        |
| COC | 1  | Conspicuous from sea           |
| COC | 2  | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3  | Radar Conspicuous from sea     |
| COC | 4  | Conspicuous from land          |
| COC | 5  | Conspicuous from air           |
| COC | 6  | Inconspicuous                  |
| COC | 7  | Generally Conspicuous          |
| COC | 8  | Not visual conspicuous         |
| COC | 9  | Visual conspicuous             |
| COC | 10 | Not radar conspicuous          |

COC 999 Other

DFR

*Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1

*Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2

*Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3

*Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

The state or condition of the feature.

|     |   |          |
|-----|---|----------|
| EXS | 0 | Unknown  |
| EXS | 1 | Definite |
| EXS | 2 | Doubtful |
| EXS | 3 | Reported |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

**FOT**      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

**HYC**      Hydrological Category  
Identifies the annual water content of the feature.  
HYC 0      Unknown  
HYC 2      Not Applicable  
HYC 3      Dry  
HYC 6      Non-Perennial /Intermittent /Fluctuating  
HYC 8      Perennial /Permanent  
HYC 999      Other

**LEN**      Length/Diameter of Point Feature  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE**      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T

LLE F

LLL

*Long Linear*

Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T

LLL F

LN1

*Layer Number*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2

*Layer Number (IR)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LOC

*Location Category*

Status of feature relative to surrounding area or water.

|     |    |   |
|-----|----|---|
| LOC | 0  | Unknown                                       |
| LOC | 1  | Above Surface/Does not Cover (Height Known)   |
| LOC | 2  | Awash at Chart Datum                          |
| LOC | 3  | Dries/Covers (Height Unknown)                 |
| LOC | 4  | Below Surface /Submerged/Underground          |
| LOC | 5  | Covered < 20 Meters                           |
| LOC | 6  | Covered ≥ 20 Meters but < 30 Meters           |
| LOC | 7  | Covered ≥30 Meters                            |
| LOC | 8  | On Ground Surface                             |
| LOC | 9  | Depth Known                                   |
| LOC | 10 | Depth Known (Cleared by Drag Wire)            |
| LOC | 11 | Depth Unknown But Safe to Depth Shown         |
| LOC | 12 | VALUE INTENTIONALLY LEFT BLANK                |
| LOC | 13 | Hull Showing                                  |
| LOC | 14 | Masts Showing                                 |
| LOC | 15 | On Water Surface/Floating                     |
| LOC | 16 | Partially Submerged                           |
| LOC | 17 | Sunken/on sea bottom                          |
| LOC | 19 | Above Surface/Does not Cover (Height Unknown) |

|     |     |   |
|-----|-----|---|
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

**NAM** Name

Any Identifier or code.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| NAM          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
|              | Text String   | Lexical      |                  | 80               |  |

**OIT** *Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

**RFL** *Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

**RKF** Rock Strata Formation

The structure of a rock formation.

|     |     |                                |
|-----|-----|--------------------------------|
| RKF | 0   | Unknown                        |
| RKF | 1   | Columnar                       |
| RKF | 2   | Needle                         |
| RKF | 3   | Pinnacle                       |
| RKF | 4   | VALUE INTENTIONALLY LEFT BLANK |
| RKF | 5   | VALUE INTENTIONALLY LEFT BLANK |
| RKF | 999 | Other                          |

**SER** *Self Emitter*

Indicates that an object has self heating characteristics

|     |   |
|-----|---|
| SER | T |
| SER | F |

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flysch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |



|     |     |                      |
|-----|-----|----------------------|
| SMS | 51  | Ground (Shells)      |
| SMS | 52  | Iron                 |
| SMS | 53  | Lava                 |
| SMS | 55  | Lead                 |
| SMS | 56  | Loess                |
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

*SPC Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

**SRD Surface Roughness Description**

Describes the condition of the surface materials that may be used for mobility prediction, construction material, and landing sites.

|     |    |   |
|-----|----|---|
| SRD | 0  | Unknown   |
| SRD | 1  | No surface roughness effect                                 |
| SRD | 2  | Area of high landslide potential                            |
| SRD | 3  | Uncohesive surface material/flat                            |
| SRD | 4  | Rough   |
| SRD | 5  | Angular   |
| SRD | 6  | Rounded   |
| SRD | 11 | Surface of numerous cobbles and boulders                    |
| SRD | 12 | Areas of stony terrain                                      |
| SRD | 13 | Stony soil with surface rock                                |
| SRD | 14 | Stony soil with scattered boulders                          |
| SRD | 15 | Stony soil with numerous boulders                           |
| SRD | 16 | Numerous boulders   |
| SRD | 17 | Numerous rock outcrops and/or stony soil                    |
| SRD | 18 | Area of scattered boulders                                  |
| SRD | 19 | Talus slope   |
| SRD | 20 | Boulder Fields  |
| SRD | 31 | Highly fractured rock surface                               |
| SRD | 32 | Weathered lava flows  |
| SRD | 33 | Unweathered lava flows                                      |
| SRD | 34 | Stony soil with numerous rock outcrops                      |
| SRD | 35 | Irregular surface with deep fractures of foliation          |
| SRD | 36 | Rugged terrain with numerous rock outcrops                  |
| SRD | 37 | Rugged bedrock surface                                      |
| SRD | 38 | Sand dunes  |
| SRD | 39 | Sand dunes / low  |
| SRD | 40 | Sand dunes/ high  |
| SRD | 41 | Active sand dunes   |
| SRD | 42 | Stabilized sand dunes                                       |
| SRD | 43 | Highly distorted area, sharp rocky ridges                   |
| SRD | 51 | Stony soil cut by numerous gullies                          |
| SRD | 52 | Moderately dissected terrain                                |
| SRD | 53 | Moderately dissected terrain with scattered rock outcrops   |
| SRD | 54 | Dissected floodplain  |
| SRD | 55 | Highly dissected terrain                                    |
| SRD | 56 | Area with deep erosional gullies                            |
| SRD | 57 | Steep, rugged, dissected terrain with narrow gullies        |
| SRD | 58 | Karst/areas of numerous sinkholes and solution valleys      |
| SRD | 59 | Karst/area of numerous sinkholes                            |
| SRD | 60 | Karst/hummocky terrain covered with large conical hills     |
| SRD | 61 | Karst/hummocky terrain covered with low, broad-based mounds |
| SRD | 62 | Arroyo/wadi/wash  |
| SRD | 63 | Playa/dry lake  |
| SRD | 64 | Area of numerous meander scars and/or oxbow lakes           |

|     |    |   |
|-----|----|---|
| SRD | 65 | Solifluction lobes and frost scars              |
| SRD | 66 | Hummocky ground, areas of frost heaving         |
| SRD | 67 | Area of frost polygons                          |
| SRD | 68 | Area containing sabkhas                         |
| SRD | 69 | Area of numerous small lakes and ponds          |
| SRD | 70 | Area of numerous crevasses                      |
| SRD | 81 | Area of numerous terraces                       |
| SRD | 82 | Quarries  |
| SRD | 83 | Strip mines                                     |
| SRD | 84 | Quarry/gravel pit                               |
| SRD | 85 | Quarry/sand pit                                 |
| SRD | 86 | Mine tailings/waste piles                       |
| SRD | 87 | Salt evaporators                                |
| SRD | 88 | Area of numerous dikes                          |
| SRD | 89 | Area of numerous diked fields                   |
| SRD | 90 | Area of numerous fences                         |
| SRD | 91 | Area of numerous stone walls                    |
| SRD | 92 | Area of numerous man-made canals/drains/ditches |
| SRD | 93 | Area of numerous terraced fields                |
| SRD | 94 | Parallel earthen mounds (row crops)             |
| SRD | 95 | Area of numerous hedgerows                      |

#### *SRT*

#### *Surface Type*

This is a composite attribute (MCC, STP and SMC from the Digest)  
Soils described by the Unified Soil Classification System (USCS) or primary  
material composition.

|     |    |   |
|-----|----|---|
| SRT | 0  | Unknown   |
| SRT | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SRT | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SRT | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SRT | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SRT | 5  | SW Well graded sand or gravelly sands                 |
| SRT | 6  | SP Poorly graded sands or gravelly sands              |
| SRT | 7  | SM Silty sands, sand-silt mixture.                    |
| SRT | 8  | SC Clayey sands, sand-clay mixtures                   |
| SRT | 9  | ML Inorganic silts and very fine sands                |
| SRT | 10 | CL Inorganic clays of low to medium plasticity        |
| SRT | 11 | OL Organic silts and organic silty clays              |
| SRT | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SRT | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SRT | 14 | OH Organic clays of medium to high plasticity         |
| SRT | 15 | PT Peat and other highly organic soils                |
| SRT | 17 | ML-CL Soil type having both ML and CL characteristics |
| SRT | 18 | Evaporites  |
| SRT | 19 | Alkali  |
| SRT | 20 | Asphalt   |
| SRT | 21 | Ash   |
| SRT | 22 | Basalt  |
| SRT | 23 | Bedrock   |
| SRT | 24 | Boulders  |
| SRT | 25 | Calcareous  |
| SRT | 26 | Chalk   |
| SRT | 27 | Cinders   |
| SRT | 28 | Cirripedia  |

|     |    |                          |
|-----|----|--------------------------|
| SRT | 29 | Clay                     |
| SRT | 30 | Coal                     |
| SRT | 31 | Cobble                   |
| SRT | 32 | Coke                     |
| SRT | 33 | Composition              |
| SRT | 34 | Conglomerate             |
| SRT | 35 | Copper                   |
| SRT | 36 | Coral                    |
| SRT | 37 | Coral Head               |
| SRT | 38 | Diamonds                 |
| SRT | 39 | Diatoms                  |
| SRT | 40 | Dolomite                 |
| SRT | 41 | Flynch                   |
| SRT | 42 | Foraminifera             |
| SRT | 43 | Fucus                    |
| SRT | 44 | Glass                    |
| SRT | 45 | Globigerina              |
| SRT | 46 | Gold                     |
| SRT | 47 | Granite                  |
| SRT | 48 | INTENTIONALLY LEFT BLANK |
| SRT | 49 | Gravel                   |
| SRT | 50 | Green Rocks              |
| SRT | 51 | Ground (Shells)          |
| SRT | 52 | Iron                     |
| SRT | 53 | Lava                     |
| SRT | 55 | Lead                     |
| SRT | 56 | Loess                    |
| SRT | 57 | Lumber                   |
| SRT | 58 | Macadam                  |
| SRT | 59 | Madrepores               |
| SRT | 60 | Manganese                |
| SRT | 61 | Marble                   |
| SRT | 62 | Marl                     |
| SRT | 63 | Mattes                   |
| SRT | 64 | Mud                      |
| SRT | 65 | Oil                      |
| SRT | 66 | Oil Blister              |
| SRT | 67 | Ooze                     |
| SRT | 70 | Pebbles                  |
| SRT | 71 | Pumice                   |
| SRT | 72 | Quartz                   |
| SRT | 73 | Radiolaria               |
| SRT | 74 | Radioactive Material     |
| SRT | 75 | Reinforced Concrete      |
| SRT | 76 | Rock/Rocky               |
| SRT | 77 | Rubber                   |
| SRT | 78 | Rubble                   |
| SRT | 79 | Salt                     |
| SRT | 80 | Sand                     |
| SRT | 81 | Sandstone                |
| SRT | 82 | Schist                   |
| SRT | 83 | Spoils/Tailings          |
| SRT | 84 | Scoria                   |
| SRT | 85 | Sewage                   |

|     |     |                   |
|-----|-----|-------------------|
| SRT | 86  | Shells            |
| SRT | 87  | Shingle           |
| SRT | 88  | Silt              |
| SRT | 89  | Silver            |
| SRT | 90  | Slag              |
| SRT | 91  | Sludge            |
| SRT | 92  | Snow/Ice          |
| SRT | 93  | Steel             |
| SRT | 94  | Stone             |
| SRT | 95  | Travertin         |
| SRT | 96  | Tufa              |
| SRT | 97  | Uranium           |
| SRT | 98  | Volcanic          |
| SRT | 99  | Volcanic Ash      |
| SRT | 100 | Zinc              |
| SRT | 101 | Distorted surface |
| SRT | 102 | Sand and gravel   |
| SRT | 103 | Rip-Rap           |
| SRT | 104 | Kelp              |
| SRT | 105 | Sandwaves         |
| SRT | 500 | Not Evaluated     |
| SRT | 999 | Other             |

*SS1 Sensors Supported*

*SS2*

*SS3* Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*SWT*

*Well/Spring Type*

Identifies the type of spring or water-hole.

|     |     |                  |
|-----|-----|------------------|
| SWT | 0   | Unknown          |
| SWT | 1   | Geyser           |
| SWT | 2   | Hot Spring       |
| SWT | 3   | Fumarole         |
| SWT | 4   | Artesian         |
| SWT | 5   | Water Hole       |
| SWT | 6   | Walled-In Spring |
| SWT | 999 | Other            |

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*

*Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP*      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

*TXT*      *Text Attribute*  
Narrative or other description.

|     |   |              |
|-----|---|--------------|
| TXT | 0 | Actual Value |
|-----|---|--------------|

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

*USE*      *Usage*  
Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |

|     |     |                                   |
|-----|-----|-----------------------------------|
| USE | 48  | Decoy                             |
| USE | 49  | Civilian/Public                   |
| USE | 50  | Limited                           |
| USE | 51  | Telegraph                         |
| USE | 52  | Telephone                         |
| USE | 53  | Power                             |
| USE | 57  | Marine                            |
| USE | 60  | Avalanche                         |
| USE | 61  | Refugee                           |
| USE | 62  | Prisoner                          |
| USE | 68  | Animal sanctuary                  |
| USE | 69  | Levee/Dike                        |
| USE | 70  | Reserve/Reservation               |
| USE | 73  | Terminus/Terminal                 |
| USE | 74  | Low Altitude enroute              |
| USE | 75  | High Altitude Enroute             |
| USE | 76  | Low and High Altitude Enroute     |
| USE | 77  | Short Take-off Landing Approach   |
| USE | 78  | Visual Approach                   |
| USE | 79  | Non-Precision Instrument Approach |
| USE | 80  | Precision Instrument Approach     |
| USE | 81  | Entry                             |
| USE | 82  | Exit                              |
| USE | 83  | Transaction                       |
| USE | 84  | Feeder                            |
| USE | 85  | Initial Approach Fix              |
| USE | 86  | Final Approach Fix                |
| USE | 87  | Visual Descent Point              |
| USE | 88  | Missed Approach Point             |
| USE | 89  | Radar                             |
| USE | 90  | Mileage Break Down                |
| USE | 91  | NAVAID Changeover                 |
| USE | 92  | Altimeter Change                  |
| USE | 93  | Compulsory Reporting Points       |
| USE | 94  | Non-Compulsory Reporting Points   |
| USE | 95  | Alert Apron/Hardstand             |
| USE | 96  | Operational Apron/Hardstand       |
| USE | 97  | Hanger/Apron                      |
| USE | 98  | Base Flight Apron                 |
| USE | 99  | Engine Test Pad/Apron             |
| USE | 100 | Transient Apron                   |
| USE | 101 | Depot Apron                       |
| USE | 102 | Stub Apron                        |
| USE | 103 | Dispersal Hardstand               |
| USE | 104 | Pad Hardstand                     |
| USE | 105 | Refueling Hardstand               |
| USE | 106 | Parking Hardstand                 |
| USE | 107 | Engine Run-up Hardstand           |
| USE | 108 | Firing-In Hardstand               |
| USE | 109 | Compass Rose Hardstand            |
| USE | 110 | Maintenance Hardstand             |
| USE | 111 | Quaternary/4th Order              |
| USE | 112 | Quinary/5th Order                 |
| USE | 113 | Regional                          |

|     |     |   |
|-----|-----|---|
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

|              |   |   |              |                  |                  |
|--------------|---|---|--------------|------------------|------------------|
| WD3          |   | Military Gap Width  |              |                  |                  |
|              |   | The minimum horizontal bridging distance between banks (in decimeters). |              |                  |                  |
| WD3          | 0 | Actual Value  |              |                  |                  |
| <u>Units</u> |   | <u>Format</u>   | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Decimeters   |   | Short Integer   | 0±32,767     | 1 DM             |                  |

|              |   |   |              |                  |                  |
|--------------|---|---|--------------|------------------|------------------|
| WID          |   | Width   |              |                  |                  |
|              |   | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |              |                  |                  |
| WID          | 0 | Actual Value  |              |                  |                  |
| <u>Units</u> |   | <u>Format</u>   | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       |   | Short Integer   | 0±32,767     | 1 M              |                  |

#### Physical Geography Void Collection Area Feature Class

ID

F-CODE/DESCRIPTION

ZD020 Void Collection Area

VCA Void Collection Attribute  
Reason data is not collected.



|     |     |  |
|-----|-----|--|
| VCA | 0   | Unknown                                      |
| VCA | 1   | Data Not Requested By User                   |
| VCA | 2   | Area Too Rough to Collect                    |
| VCA | 3   | No Available Imagery                         |
| VCA | 4   | Different Height Threshold Within Data Block |
| VCA | 5   | Low Data Collection Criteria                 |
| VCA | 6   | No Available Map Source                      |
| VCA | 7   | No Suitable Imagery                          |
| VCA | 8   | Data Not Required                            |
| VCA | 999 | Other  |

## Appendix I. Population Coverage

### Military Feature Class

ID

#### F-CODE/DESCRIPTION

AH010 Bastion/Rampart/Fortification

AH050 Fortification

SU001 Military Base - A center of operations for a military organization.

AH070 Checkpoint - An official place to register, declare or check goods and people.

AH020 Trench

AH060 Underground Bunker - An underground facility used by the military either for location of command/control centers or for troop encampment.

AL120 Missile Site

FA015 Firing Range/Gunnery Range

AT020 Early Warning Radar Site

AT045 Radar Transmitter

ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC

#### Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

AOO

#### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| AOO     | 0             | Actual Value              |
|---------|---------------|---------------------------|
| Units   | Format        | Range Increment Max Chars |
| Degrees | Short Integer | 0-360 1 DEG               |

ATN

#### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

|     |                     |                        |
|-----|---------------------|------------------------|
| CCC | Color Code Category |                        |
| CCC | 0                   | Unknown/Not applicable |
| CCC | 1                   | Black                  |
| CCC | 2                   | Blue                   |
| CCC | 3                   | Brown                  |
| CCC | 4                   | Gray                   |
| CCC | 5                   | Green                  |
| CCC | 7                   | Chocolate              |
| CCC | 9                   | Orange                 |
| CCC | 12                  | Red                    |
| CCC | 14                  | Violet                 |
| CCC | 15                  | White                  |
| CCC | 19                  | Yellow                 |
| CCC | 47                  | Magenta                |
| CCC | 48                  | Amber                  |
| CCC | 49                  | Buff                   |
| CCC | 51                  | Bluegreen              |
| CCC | 52                  | Bright Blue            |
| CCC | 53                  | Aqua                   |
| CCC | 55                  | Bright Green           |
| CCC | 58                  | Bright Yellow          |
| CCC | 61                  | Bright Red             |
| CCC | 63                  | Cyan                   |
| CCC | 64                  | Purple                 |
| CCC | 69                  | Pink                   |
| CCC | 70                  | Lavender               |
| CCC | 999                 | Other                  |

|     |                                    |         |
|-----|------------------------------------|---------|
| CIC | Color Intensity Category           |         |
|     | Identifies the intensity of color. |         |
| CIC | 0                                  | Unknown |
| CIC | 1                                  | Dark    |
| CIC | 2                                  | Light   |
| CIC | 999                                | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category  |                                |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

DFR      *Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1

*Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2

*Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3

*Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

#### FCO

##### Feature Configuration

Configuration of feature.

|     |     |                          |
|-----|-----|--------------------------|
| FCO | 0   | Unknown                  |
| FCO | 1   | Dispersed                |
| FCO | 2   | Multiple                 |
| FCO | 3   | Single                   |
| FCO | 4   | Inclined                 |
| FCO | 5   | Divided same widths      |
| FCO | 6   | Divided different widths |
| FCO | 7   | Non-divided              |
| FCO | 8   | Poorly defined           |
| FCO | 9   | Well-defined             |
| FCO | 11  | Double                   |
| FCO | 12  | Justaposition            |
| FCO | 999 | Other                    |

#### FOT

##### Feature Onset

Indicator for changing radar backscatter coefficients.

FOT T  
FOT F

#### FRT

##### Firing Range Type

|     |     |                  |
|-----|-----|------------------|
| FRT | 0   | Unknown          |
| FRT | 1   | Rifle/Small Arms |
| FRT | 2   | Tank             |
| FRT | 3   | Artillery        |
| FRT | 4   | Grenade          |
| FRT | 5   | Demolition Area  |
| FRT | 6   | Impact Area      |
| FRT | 999 | Other            |

**HGT**      **Height Above Surface Level**  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| HGT          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

**IMC**      **Internal Material Category**  
Category code for material internal to an object.

|              |               |              |                  |                 |  |
|--------------|---------------|--------------|------------------|-----------------|--|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |  |
|              | Integer       | 1 .. 32767   |                  |                 |  |

**LEN**      **Length/Diameter of Point Feature**  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| LEN          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

**LLE**      **Low Level Effects**  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T  
LLE F

**LLL**      **Long Lineal**  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features

LLL T  
LLL F

**LN1**      **Layer Number**  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

|              |               |                |                  |                 |  |
|--------------|---------------|----------------|------------------|-----------------|--|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |  |
|              | Integer       | 0.. 2147483647 |                  |                 |  |

**LN2**      **Layer Number (IR)**  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

NAM

*Name*

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

RFL

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SER

*Self Emitter*

Indicates that an object has self heating characteristics

SER T  
SER F

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |  |
|-----|----|--|
| SMS | 0  | Unknown  |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures   |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures      |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture      |
| SMS | 5  | SW Well graded sand or gravelly sands            |
| SMS | 6  | SP Poorly graded sands or gravelly sands         |
| SMS | 7  | SM Silty sands, sand-silt mixture.               |
| SMS | 8  | SC Clayey sands, sand-clay mixtures              |
| SMS | 9  | ML Inorganic silts and very fine sands           |
| SMS | 10 | CL Inorganic clays of low to medium plasticity   |
| SMS | 11 | OL Organic silts and organic silty clays         |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous    |
| SMS | 14 | OH Organic clays of medium to high plasticity    |

|     |    |   |
|-----|----|---|
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |
| SMS | 57 | Lumber  |
| SMS | 58 | Macadam   |
| SMS | 59 | Madrepores  |
| SMS | 60 | Manganese   |
| SMS | 61 | Marble  |
| SMS | 62 | Marl  |
| SMS | 63 | Mattes  |
| SMS | 64 | Mud   |
| SMS | 65 | Oil   |
| SMS | 66 | Oil Blister   |
| SMS | 67 | Ooze  |
| SMS | 70 | Pebbles   |
| SMS | 71 | Pumice  |
| SMS | 72 | Quartz  |



|     |     |                      |
|-----|-----|----------------------|
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

*SPC*

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

*SS1*

*Sensors Supported*

*SS2*

*SS3*

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

|     |   |               |              |                  |                  |
|-----|---|---------------|--------------|------------------|------------------|
| TRL | <i>Translucency</i>   |               |              |                  |                  |
|     | The degree to which a surface is transparent.   |               |              |                  |                  |
|     | Type - Real(6 sd)                      Range - 0.0 .. 100.0   |               |              |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real (f7.3)   | 0.0 .. 100.0 |                  |                  |
| TRV | <i>Transmissivity</i>   |               |              |                  |                  |
|     | Ratio of energy transmitted by an object to the amount of energy incident upon it.  |               |              |                  |                  |
|     | Type - Real(6 sd)                      Range - 0.0 .. 1.0   |               |              |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real (f7.6)   | 0.0 .. 1.0   |                  |                  |
| TTP | <i>Texture Type</i>   |               |              |                  |                  |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC).  |               |              |                  |                  |
|     | TTP    1            RGB   |               |              |                  |                  |
|     | TTP    2            GRAY  |               |              |                  |                  |
|     | TTP    3            MULTI   |               |              |                  |                  |
|     | TTP    4            SMFD  |               |              |                  |                  |
|     |   |               |              |                  |                  |
| TXT | Text Attribute  |               |              |                  |                  |
|     | Narrative or other description.   |               |              |                  |                  |
|     | TXT    0            Actual Value  |               |              |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Text String   | Lexical      |                  | 256              |
| WID | Width   |               |              |                  |                  |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |               |              |                  |                  |
|     | WID    0            Actual Value  |               |              |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters  | Short Integer | 0±32,767     | 1 M              |                  |
| USE | Usage   |               |              |                  |                  |
|     | Use (identifies the primary user, function, or controlling authority).  |               |              |                  |                  |
|     | USE    0            Unknown   |               |              |                  |                  |
|     | USE    4            National  |               |              |                  |                  |
|     | USE    5            State   |               |              |                  |                  |
|     | USE    6            Private   |               |              |                  |                  |
|     | USE    7            Tribal  |               |              |                  |                  |
|     | USE    8            Military  |               |              |                  |                  |
|     | USE    10           Other   |               |              |                  |                  |
|     | USE    11           Motel/Hotel   |               |              |                  |                  |
|     | USE    12           Apartment   |               |              |                  |                  |
|     | USE    13           Open  |               |              |                  |                  |
|     | USE    14           VALUE INTENTIONALLY LEFT BLANK  |               |              |                  |                  |
|     | USE    15           VALUE INTENTIONALLY LEFT BLANK  |               |              |                  |                  |
|     | USE    16           City  |               |              |                  |                  |
|     | USE    17           Advertising Billboard   |               |              |                  |                  |
|     | USE    18           Scoreboard  |               |              |                  |                  |
|     | USE    19           Highway Sign  |               |              |                  |                  |
|     | USE    20           Closed  |               |              |                  |                  |
|     | USE    21           Restricted  |               |              |                  |                  |
|     | USE    22           Joint Military/Civilian   |               |              |                  |                  |

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |
| USE | 85 | Initial Approach Fix               |
| USE | 86 | Final Approach Fix                 |
| USE | 87 | Visual Descent Point               |
| USE | 88 | Missed Approach Point              |
| USE | 89 | Radar                              |
| USE | 90 | Mileage Break Down                 |
| USE | 91 | NAVAID Changeover                  |
| USE | 92 | Altimeter Change                   |
| USE | 93 | Compulsory Reporting Points        |
| USE | 94 | Non-Compulsory Reporting Points    |
| USE | 95 | Alert Apron/Hardstand              |
| USE | 96 | Operational Apron/Hardstand        |
| USE | 97 | Hanger/Apron                       |
| USE | 98 | Base Flight Apron                  |
| USE | 99 | Engine Test Pad/Apron              |

|     |     |   |
|-----|-----|---|
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

ZV2

Highest Z-value

Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Chars |
|--------|---------------|----------------|-----------|-----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

## Residential/Populated Place Feature Class

ID

### F-CODE/DESCRIPTION

AI020 US Mobile Home/Mobile Home Park  
 AI030 Camp - A place where tents or buildings serve as temporary residences for members of an organization.  
 AL040 Cliff Dwelling - A dwelling built in the recesses of cliffs.  
 AL100 Hut  
 AL101 Cabin - A building in a remote or wilderness area.  
 AL105 Settlement  
 AL135 Native Settlement  
 AL250 Underground Dwelling - Underground living quarters.

ABS

### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

AOO

### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

ARA

### Area Coverage Attribute

The absolute area within the delineation of the feature.

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

ATN

### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

CCC

### Color Code Category

|     |   |                        |
|-----|---|------------------------|
| CCC | 0 | Unknown/Not applicable |
| CCC | 1 | Black                  |
| CCC | 2 | Blue                   |
| CCC | 3 | Brown                  |
| CCC | 4 | Gray                   |
| CCC | 5 | Green                  |
| CCC | 7 | Chocolate              |
| CCC | 9 | Orange                 |

|     |     |               |
|-----|-----|---------------|
| CCC | 12  | Red           |
| CCC | 14  | Violet        |
| CCC | 15  | White         |
| CCC | 19  | Yellow        |
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

CIC Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

DFR *Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DMR Density Measure (% of Roof Cover)

Roof cover measured by percent within area of feature.

| DMR     | 0             | Actual Value |           |           |  |
|---------|---------------|--------------|-----------|-----------|--|
| Units   | Format        | Range        | Increment | Max Chars |  |
| Percent | Short Integer | 0-100        | 1 %       |           |  |

**DY1**      *Directivity*  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      *Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      *Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

**EMY**      *Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**EXI**      *Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

**EXS**      *Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

#### FCO

##### Feature Configuration

Configuration of feature.

|     |     |                          |
|-----|-----|--------------------------|
| FCO | 0   | Unknown                  |
| FCO | 1   | Dispersed                |
| FCO | 2   | Multiple                 |
| FCO | 3   | Single                   |
| FCO | 4   | Inclined                 |
| FCO | 5   | Divided same widths      |
| FCO | 6   | Divided different widths |
| FCO | 7   | Non-divided              |
| FCO | 8   | Poorly defined           |
| FCO | 9   | Well-defined             |
| FCO | 11  | Double                   |
| FCO | 12  | Justaxposition           |
| FCO | 999 | Other                    |

#### FOT

##### Feature Onset

Indicator for changing radar backscatter coefficients.

FOT T

FOT F



|        |  |                |           |           |  |
|--------|--|----------------|-----------|-----------|--|
| HGT    | Height Above Surface Level<br>Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  |                |           |           |  |
| HGT    | 0  | Actual Value   |           |           |  |
| Units  | Format   | Range          | Increment | Max Chars |  |
| Meters | Short Integer  | 0±32,767       | 1 M       |           |  |
| IMC    | Internal Material Category<br>Category code for material internal to an object.  |                |           |           |  |
| Units  | Format   | Range          | Increment | Max Char  |  |
|        | Integer  | 1 .. 32767     |           |           |  |
| LEN    | Length/Diameter of Point Feature<br>A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.           |                |           |           |  |
| LEN    | 0  | Actual Value   |           |           |  |
| Units  | Format   | Range          | Increment | Max Chars |  |
| Meters | Short Integer  | 0±32,767       | 1 M       |           |  |
| LLE    | Low Level Effects<br>Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.   |                |           |           |  |
|        | LLE T  |                |           |           |  |
|        | LLE F  |                |           |           |  |
| LLL    | Long Lineal<br>Reference to a point feature which could potentially look like a long linear feature by radar.<br>Applies to point features   |                |           |           |  |
|        | LLL T  |                |           |           |  |
|        | LLL F  |                |           |           |  |
| LN1    | Layer Number<br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).           |                |           |           |  |
| Units  | Format   | Range          | Increment | Max Char  |  |
|        | Integer  | 0.. 2147483647 |           |           |  |
| LN2    | Layer Number (IR)<br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).    |                |           |           |  |
| Units  | Format   | Range          | Increment | Max Char  |  |
|        | Integer  | 0.. 2147483647 |           |           |  |
| LN3    | Layer Number (Radar)<br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |                |           |           |  |

|     | Units  | Format      | Range  | Increment | Max Char  |
|-----|--|-------------|--|-----------|-----------|
|     |  | Integer     | 0.. 2147483647                                   |           |           |
| NAM | Name<br>Any Identifier or code.  |             |  |           |           |
|     | NAM  | 0           | Actual Value                                     |           |           |
|     | Units  | Format      | Range  | Increment | Max Chars |
|     |  | Text String | Lexical  |           | 80        |
| NAS | Native Settlement Type<br>The distribution of native dwellings within the delineated area of the feature.  |             |  |           |           |
|     | NAS  | 0           | Unknown  |           |           |
|     | NAS  | 1           | Centralized Habitation                           |           |           |
|     | NAS  | 2           | Continuous Habitation                            |           |           |
| OIT | <i>Object Illumination Type</i><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features. |             |  |           |           |
|     | OIT  | 1           | SELF   |           |           |
|     | OIT  | 2           | SUN  |           |           |
|     | OIT  | 3           | NOSUN  |           |           |
| PPT | Populated Place Type<br>The type of populated place.   |             |  |           |           |
|     | PPT  | 0           | Unknown  |           |           |
|     | PPT  | 1           | Native Settlement                                |           |           |
|     | PPT  | 2           | Shanty town                                      |           |           |
|     | PPT  | 3           | Tent Dwellings                                   |           |           |
|     | PPT  | 99          | Inland Village                                   |           |           |
|     | PPT  | 999         | Other  |           |           |
| RFL | <i>Reflectance</i><br>Ratio of radiant energy reflected by and object to the amount incident upon it.  |             |  |           |           |
|     | Units  | Format      | Range  | Increment | Max Char  |
|     |  | Real (f7.6) | 0.0 .. 1.0                                       |           |           |
| SER | <i>Self Emitter</i><br>Indicates that an object has self heating characteristics   |             |  |           |           |
|     | SER  | T           |  |           |           |
|     | SER  | F           |  |           |           |
| SMS | <i>Surface Material Subtype</i><br>Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.                 |             |  |           |           |
|     | SMS  | 0           | Unknown  |           |           |
|     | SMS  | 1           | GW Well graded gravels or gravel-sand mixtures   |           |           |
|     | SMS  | 2           | GP Poorly graded gravels or gravel-sand mixtures |           |           |
|     | SMS  | 3           | GM Silty gravels, gravel-sand-silt mixtures      |           |           |
|     | SMS  | 4           | GC Clayey gravels, gravel-sand-clay mixture      |           |           |
|     | SMS  | 5           | SW Well graded sand or gravelly sands            |           |           |
|     | SMS  | 6           | SP Poorly graded sands or gravelly sands         |           |           |

|     |    |   |
|-----|----|---|
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |
| SMS | 57 | Lumber  |
| SMS | 58 | Macadam   |
| SMS | 59 | Madrepores  |
| SMS | 60 | Manganese   |
| SMS | 61 | Marble  |
| SMS | 62 | Marl  |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

SS1

*Sensors Supported*

SS2

SS3

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

**TMR**      *Texture Map Reflectance*  
 Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TRL**      *Translucency*  
 The degree to which a surface is transparent.

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

**TRV**      *Transmissivity*  
 Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TTP**      *Texture Type*  
 Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |  |  |
|-----|---|-------|--|--|
| TTP | 1 | RGB   |  |  |
| TTP | 2 | GRAY  |  |  |
| TTP | 3 | MULTI |  |  |
| TTP | 4 | SMFD  |  |  |

**TXT**      *Text Attribute*  
 Narrative or other description.

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

**WID**      *Width*  
 A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**ZV2**      *Highest Z-value*  
 Elevation above a given datum to the highest portion of the feature.

| Units  | Format        | Range          | Increment | Max Chars |
|--------|---------------|----------------|-----------|-----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

## Recreational Feature Class

ID

F-CODE/DESCRIPTION

AK020 Amusement Park Attraction  
 AK030 Amusement Park  
 AK040 US Athletic Field

AK050 Tennis Court(s) - An area or site used for the sport of tennis.  
 AK060 Campground/Campsite - A location for camping.  
 AK061 Picnic Site - A parcel of land that has picnic tables for public use.  
 AK070 US Drive In Theater - A place where motion pictures are shown while viewers remain in their vehicles  
 AK080 US Drive In Theater Screen  
 AK090 Fairgrounds  
 AK091 Exhibition Grounds - An area where permanent facilities exist to hold outdoor exhibitions.  
 AK100 Golf Course  
 AK101 Golf Driving Range - A parcel or tract of land used for practicing golf shots.  
 AK110 Grandstand  
 AK120 Park  
 AK121 Lookout - An area, generally an elevated place, with facilities for observing the scenery.  
 AK130 US Race Track  
 AK150 Ski Jump  
 AK155 Ski Track - A course prepared for skiing.  
 AK160 US Stadium/Amphitheater  
 AK170 Swimming Pool  
 AK180 Zoo/Safari Park  
 AL005 Animal Sanctuary - A natural area set aside for the preservation and protection of wildlife.  
 AL201 Historic Site/Point of Interest - Site or area declared to be of national or provincial historical significance or interest, maintained for the public.

ABS

*Absorptivity*

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC

*Accuracy Category*

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

AOO

*Angle of Orientation*

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| AOO     | 0             | Actual Value |           |           |
|---------|---------------|--------------|-----------|-----------|
| Units   | Format        | Range        | Increment | Max Chars |
| Degrees | Short Integer | 0-360        | 1 DEG     |           |

ARA

*Area Coverage Attribute*

The absolute area within the delineation of the feature.

|     |   |              |
|-----|---|--------------|
| ARA | 0 | Actual Value |
|-----|---|--------------|

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

#### ATN

##### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

#### CCC

##### Color Code Category

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

#### CIC

##### Color Intensity Category

Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

#### COC

##### Conspicuous Category

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |   |                      |
|-----|---|----------------------|
| COC | 0 | Unknown              |
| COC | 1 | Conspicuous from sea |

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

*DFR*

*Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

*DY1*

*Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

*DY2*

*Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

*DY3*

*Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY*

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

*EXI*

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.



| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

Existence Category

The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

FOT

*Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

HGT

Height Above Surface Level

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

|            |  |               |                |                  |                  |
|------------|--|---------------|----------------|------------------|------------------|
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|            | Meters   | Short Integer | 0±32,767       | 1 M              |                  |
| <i>IMC</i> | <i>Internal Material Category</i>  |               |                |                  |                  |
|            | Category code for material internal to an object.  |               |                |                  |                  |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|            |  | Integer       | 1 .. 32767     |                  |                  |
| <i>LEN</i> | <i>Length/Diameter of Point Feature</i>  |               |                |                  |                  |
|            | A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.                       |               |                |                  |                  |
|            | LEN  | 0             | Actual Value   |                  |                  |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|            | Meters   | Short Integer | 0±32,767       | 1 M              |                  |
| <i>LLE</i> | <i>Low Level Effects</i>   |               |                |                  |                  |
|            | Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  |               |                |                  |                  |
|            | LLE T  |               |                |                  |                  |
|            | LLE F  |               |                |                  |                  |
| <i>LLL</i> | <i>Long Lineal</i>   |               |                |                  |                  |
|            | Reference to a point feature which could potentially look like a long linear feature by radar.   |               |                |                  |                  |
|            | Applies to point features  |               |                |                  |                  |
|            | LLL T  |               |                |                  |                  |
|            | LLL F  |               |                |                  |                  |
| <i>LN1</i> | <i>Layer Number</i>  |               |                |                  |                  |
|            | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).   |               |                |                  |                  |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|            |  | Integer       | 0.. 2147483647 |                  |                  |
| <i>LN2</i> | <i>Layer Number (IR)</i>   |               |                |                  |                  |
|            | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |                |                  |                  |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|            |  | Integer       | 0.. 2147483647 |                  |                  |
| <i>LN3</i> | <i>Layer Number (Radar)</i>  |               |                |                  |                  |
|            | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |                |                  |                  |
|            | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|            |  | Integer       | 0.. 2147483647 |                  |                  |
| <i>NAM</i> | <i>Name</i>  |               |                |                  |                  |
|            | Any Identifier or code.  |               |                |                  |                  |

|       |             |              |           |           |
|-------|-------------|--------------|-----------|-----------|
| NAM   | 0           | Actual Value |           |           |
| Units | Format      | Range        | Increment | Max Chars |
|       | Text String | Lexical      |           | 80        |

*OIT*      *Object Illumination Type*  
 Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
 Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

*RFL*      *Reflectance*  
 Ratio of radiant energy reflected by and object to the amount incident upon it.

|       |             |            |           |          |
|-------|-------------|------------|-----------|----------|
| Units | Format      | Range      | Increment | Max Char |
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER*      *Self Emitter*  
 Indicates that an object has self heating characteristics

|     |   |
|-----|---|
| SER | T |
| SER | F |

*SMS*      *Surface Material Subtype*  
 Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

#### SPC

##### *Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

#### SS1

##### *Sensors Supported*

#### SS2

#### SS3

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

#### SSC

##### *Structure Shape Category*

Geometric form, appearance, or configuration of the feature.

|     |    |                                |
|-----|----|--------------------------------|
| SSC | 0  | Unknown                        |
| SSC | 1  | Barrel, Ton                    |
| SSC | 2  | Blimp                          |
| SSC | 3  | Boat Hull (Float)              |
| SSC | 4  | Bullet                         |
| SSC | 5  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 6  | Conical /Peaked/NUN            |
| SSC | 7  | Cylindrical (Upright)/CAN      |
| SSC | 9  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 10 | Pillar, Spindle                |
| SSC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 12 | Pyramid                        |
| SSC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 14 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 15 | Solid/filled                   |
| SSC | 16 | Spar                           |
| SSC | 17 | Spherical (Hemispherical)      |

|     |     |                                   |
|-----|-----|-----------------------------------|
| SSC | 18  | Truss                             |
| SSC | 19  | With Radome                       |
| SSC | 20  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 21  | Artificial Mountain               |
| SSC | 22  | Crescent                          |
| SSC | 23  | Ferris Wheel                      |
| SSC | 24  | Enclosed                          |
| SSC | 25  | Roller coaster                    |
| SSC | 26  | Lateral                           |
| SSC | 27  | Mounds                            |
| SSC | 28  | Ripple                            |
| SSC | 29  | Star                              |
| SSC | 30  | Transverse                        |
| SSC | 31  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 33  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 34  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 35  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 36  | Windmotor                         |
| SSC | 38  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 40  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 46  | Open                              |
| SSC | 52  | 'A' Frame                         |
| SSC | 53  | 'H' Frame                         |
| SSC | 54  | 'I' Frame                         |
| SSC | 56  | 'Y' Frame                         |
| SSC | 57  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 58  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 59  | Telescoping Gasholder (Gasometer) |
| SSC | 60  | Mast                              |
| SSC | 61  | Tripod                            |
| SSC | 62  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 63  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 65  | Cylindrical with flat top         |
| SSC | 66  | Cylindrical with domed top        |
| SSC | 71  | Cylindrical/Peaked                |
| SSC | 73  | Superbuoy                         |
| SSC | 74  | 'T' Frame                         |
| SSC | 75  | Tetrahedron                       |
| SSC | 76  | Funnel                            |
| SSC | 77  | Arch                              |
| SSC | 78  | Multi-Arch                        |
| SSC | 79  | Round                             |
| SSC | 80  | Rectangular                       |
| SSC | 81  | Dragons Teeth                     |
| SSC | 82  | I-Beam                            |
| SSC | 83  | Square                            |
| SSC | 84  | Irregular                         |
| SSC | 85  | Diamond Shaped Buoy               |
| SSC | 86  | Oval                              |
| SSC | 87  | Dome                              |
| SSC | 107 | Tower                             |
| SSC | 108 | Scanner                           |
| SSC | 109 | Obelisk                           |
| SSC | 999 | Other                             |

|     |  |               |                                |                  |                 |
|-----|--|---------------|--------------------------------|------------------|-----------------|
| TMR | <i>Texture Map Reflectance</i>   |               |                                |                  |                 |
|     | Reflectance value assigned to a texture map  |               |                                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Real (f7.6)   | 0.0 .. 1.0                     |                  |                 |
| TRL | <i>Translucency</i>  |               |                                |                  |                 |
|     | The degree to which a surface is transparent.  |               |                                |                  |                 |
|     | Type - Real(6 sd)                      Range - 0.0 .. 100.0                            |               |                                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Real (f7.3)   | 0.0 .. 100.0                   |                  |                 |
| TRV | <i>Transmissivity</i>  |               |                                |                  |                 |
|     | Ratio of energy transmitted by an object to the amount of energy incident upon it.     |               |                                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Real (f7.6)   | 0.0 .. 1.0                     |                  |                 |
| TTP | <i>Texture Type</i>  |               |                                |                  |                 |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC). |               |                                |                  |                 |
|     | TTP  | 1             | RGB                            |                  |                 |
|     | TTP  | 2             | GRAY                           |                  |                 |
|     | TTP  | 3             | MULTI                          |                  |                 |
|     | TTP  | 4             | SMFD                           |                  |                 |
| TXT | <i>Text Attribute</i>  |               |                                |                  |                 |
|     | Narrative or other description.  |               |                                |                  |                 |
|     | TXT  | 0             | Actual Value                   |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Text String   | Lexical                        |                  | 256             |
| USE | <i>Usage</i>   |               |                                |                  |                 |
|     | Use (identifies the primary user, function, or controlling authority).                 |               |                                |                  |                 |
|     | USE  | 0             | Unknown                        |                  |                 |
|     | USE  | 4             | National                       |                  |                 |
|     | USE  | 5             | State                          |                  |                 |
|     | USE  | 6             | Private                        |                  |                 |
|     | USE  | 7             | Tribal                         |                  |                 |
|     | USE  | 8             | Military                       |                  |                 |
|     | USE  | 10            | Other                          |                  |                 |
|     | USE  | 11            | Motel/Hotel                    |                  |                 |
|     | USE  | 12            | Apartment                      |                  |                 |
|     | USE  | 13            | Open                           |                  |                 |
|     | USE  | 14            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | USE  | 15            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | USE  | 16            | City                           |                  |                 |
|     | USE  | 17            | Advertising Billboard          |                  |                 |
|     | USE  | 18            | Scoreboard                     |                  |                 |
|     | USE  | 19            | Highway Sign                   |                  |                 |
|     | USE  | 20            | Closed                         |                  |                 |
|     | USE  | 21            | Restricted                     |                  |                 |
|     | USE  | 22            | Joint Military/Civilian        |                  |                 |
|     | USE  | 23            | International                  |                  |                 |

|     |     |                                    |
|-----|-----|------------------------------------|
| USE | 24  | Unidentified Aircraft Landing Area |
| USE | 25  | Federal                            |
| USE | 26  | Primary/1st Order                  |
| USE | 30  | Secondary/2nd Order                |
| USE | 31  | Tertiary/3rd Order                 |
| USE | 32  | Insular                            |
| USE | 33  | Provincial                         |
| USE | 37  | Interstate                         |
| USE | 41  | Industrial                         |
| USE | 42  | Commercial                         |
| USE | 43  | Institutional                      |
| USE | 44  | Residential                        |
| USE | 45  | Agricultural                       |
| USE | 48  | Decoy                              |
| USE | 49  | Civilian/Public                    |
| USE | 50  | Limited                            |
| USE | 51  | Telegraph                          |
| USE | 52  | Telephone                          |
| USE | 53  | Power                              |
| USE | 57  | Marine                             |
| USE | 60  | Avalanche                          |
| USE | 61  | Refugee                            |
| USE | 62  | Prisoner                           |
| USE | 68  | Animal sanctuary                   |
| USE | 69  | Levee/Dike                         |
| USE | 70  | Reserve/Reservation                |
| USE | 73  | Terminus/Terminal                  |
| USE | 74  | Low Altitude enroute               |
| USE | 75  | High Altitude Enroute              |
| USE | 76  | Low and High Altitude Enroute      |
| USE | 77  | Short Take-off Landing Approach    |
| USE | 78  | Visual Approach                    |
| USE | 79  | Non-Precision Instrument Approach  |
| USE | 80  | Precision Instrument Approach      |
| USE | 81  | Entry                              |
| USE | 82  | Exit                               |
| USE | 83  | Transaction                        |
| USE | 84  | Feeder                             |
| USE | 85  | Initial Approach Fix               |
| USE | 86  | Final Approach Fix                 |
| USE | 87  | Visual Descent Point               |
| USE | 88  | Missed Approach Point              |
| USE | 89  | Radar                              |
| USE | 90  | Mileage Break Down                 |
| USE | 91  | NAVAID Changeover                  |
| USE | 92  | Altimeter Change                   |
| USE | 93  | Compulsory Reporting Points        |
| USE | 94  | Non-Compulsory Reporting Points    |
| USE | 95  | Alert Apron/Hardstand              |
| USE | 96  | Operational Apron/Hardstand        |
| USE | 97  | Hanger/Apron                       |
| USE | 98  | Base Flight Apron                  |
| USE | 99  | Engine Test Pad/Apron              |
| USE | 100 | Transient Apron                    |



|     |     |   |
|-----|-----|---|
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

#### WID

##### Width

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

#### ZV2

##### Highest Z-value

Elevation above a given datum to the highest portion of the feature.

|              |               |                |                  |                  |  |
|--------------|---------------|----------------|------------------|------------------|--|
| ZV2          | 0             | Actual Value   |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | -400 to 30,000 | 1 M              |                  |  |

## Ruins/Monument Feature Class

ID

### F-CODE/DESCRIPTION

AL012 Archeological Site - A site or location where remains of ancient civilizations or human activity have been discovered.

AL030 US Cemetery

AL130 US Monument

AL200 Ruins

AL090 US Grave Marker - A marker indicating an individual grave site.

AL025 Cairn

AL116 Calvary Cross - A structure, mounted on a pedestal, composed of an upright member with a shorter horizontal member centered at approximately two thirds of the height of the upright member.

ABS

*Absorptivity*

Ratio of radiant (thermal) energy to the energy incident upon it.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

ACC

Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

AOO

Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| AOO          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Degrees      | Short Integer | 0-360        | 1 DEG            |                  |  |

ARA

Area Coverage Attribute

The absolute area within the delineation of the feature.

|              |               |              |                  |                 |  |
|--------------|---------------|--------------|------------------|-----------------|--|
| ARA          | 0             | Actual Value |                  |                 |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |  |
| Sq. Meters   | Short Integer | 0±32,767     | 1 M <sup>2</sup> |                 |  |
| Hectares     | Short Integer | 0±32,767     | 1 HA             |                 |  |

|     |                     |                        |
|-----|---------------------|------------------------|
| CCC | Color Code Category |                        |
| CCC | 0                   | Unknown/Not applicable |
| CCC | 1                   | Black                  |
| CCC | 2                   | Blue                   |
| CCC | 3                   | Brown                  |
| CCC | 4                   | Gray                   |
| CCC | 5                   | Green                  |
| CCC | 7                   | Chocolate              |
| CCC | 9                   | Orange                 |
| CCC | 12                  | Red                    |
| CCC | 14                  | Violet                 |
| CCC | 15                  | White                  |
| CCC | 19                  | Yellow                 |
| CCC | 47                  | Magenta                |
| CCC | 48                  | Amber                  |
| CCC | 49                  | Buff                   |
| CCC | 51                  | Bluegreen              |
| CCC | 52                  | Bright Blue            |
| CCC | 53                  | Aqua                   |
| CCC | 55                  | Bright Green           |
| CCC | 58                  | Bright Yellow          |
| CCC | 61                  | Bright Red             |
| CCC | 63                  | Cyan                   |
| CCC | 64                  | Purple                 |
| CCC | 69                  | Pink                   |
| CCC | 70                  | Lavender               |
| CCC | 999                 | Other                  |

|     |                                    |         |
|-----|------------------------------------|---------|
| CIC | Color Intensity Category           |         |
|     | Identifies the intensity of color. |         |
| CIC | 0                                  | Unknown |
| CIC | 1                                  | Dark    |
| CIC | 2                                  | Light   |
| CIC | 999                                | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category  |                                |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

|     |                         |                            |
|-----|-------------------------|----------------------------|
| CPA | Control Point Attribute |                            |
|     | Type of control point.  |                            |
| CPA | 0                       | Unknown                    |
| CPA | 1                       | Bench Mark                 |
| CPA | 2                       | Horizontal                 |
| CPA | 3                       | Horizontal with Bench Mark |
| CPA | 4                       | Astronomic position        |
| CPA | 5                       | Vertical                   |

|     |   |               |              |                  |                 |
|-----|---|---------------|--------------|------------------|-----------------|
| DFR | Diffuse Reflectance                                 |               |              |                  |                 |
|     | Radar backscatter coefficient, expressed as a ratio |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     |   | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

|     |  |         |
|-----|--|---------|
| DY1 | Directivity  |         |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (visual response). |         |
| DY1 | 0  | Unknown |
| DY1 | 1  | Uni     |
| DY1 | 2  | Bi      |
| DY1 | 3  | Omni    |
| DY1 | 999  | Other   |

|     |  |         |
|-----|--|---------|
| DY2 | Directivity (IR)   |         |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response). |         |
| DY2 | 0  | Unknown |
| DY2 | 1  | Uni     |
| DY2 | 2  | Bi      |
| DY2 | 3  | Omni    |
| DY2 | 999  | Other   |

|     |  |         |
|-----|--|---------|
| DY3 | Directivity (Radar)  |         |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response). |         |
| DY3 | 0  | Unknown |
| DY3 | 1  | Uni     |
| DY3 | 2  | Bi      |
| DY3 | 3  | Omni    |
| DY3 | 999  | Other   |

|     |   |             |            |           |          |
|-----|---|-------------|------------|-----------|----------|
| EMY | Emissivity  |             |            |           |          |
|     | Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature. |             |            |           |          |
|     | Units   | Format      | Range      | Increment | Max Char |
|     |   | Real (f7.6) | 0.0 .. 1.0 |           |          |

|     |   |  |
|-----|---|--|
| EXI | Exitance  |  |
|     | Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm <sup>2</sup> . |  |

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

**Existence Category**

The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

FOT

*Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

HGT

**Height Above Surface Level**

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| HGT          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

IMC

*Internal Material Category*

Category code for material internal to an object.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 1 .. 32767   |                  |                 |

LEN

*Length/Diameter of Point Feature*

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| LEN          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

LLE

*Low Level Effects*

Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T

LLE F

LLL

*Long Lineal*

Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T

LLL F

LN1

*Layer Number*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

LN2

*Layer Number (IR)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

| LOC     | Location Category  |  |
|---------|--|--|
|         | Status of feature relative to surrounding area or water. |  |
| LOC 0   | Unknown  |  |
| LOC 1   | Above Surface/Does not Cover (Height Known)              |  |
| LOC 2   | Awash at Chart Datum                                     |  |
| LOC 3   | Dries/Covers (Height Unknown)                            |  |
| LOC 4   | Below Surface /Submerged/Underground                     |  |
| LOC 5   | Covered < 20 Meters                                      |  |
| LOC 6   | Covered ≥ 20 Meters but < 30 Meters                      |  |
| LOC 7   | Covered ≥30 Meters                                       |  |
| LOC 8   | On Ground Surface  |  |
| LOC 9   | Depth Known  |  |
| LOC 10  | Depth Known ( Cleared by Drag Wire)                      |  |
| LOC 11  | Depth Unknown But Safe to Depth Shown                    |  |
| LOC 12  | VALUE INTENTIONALLY LEFT BLANK                           |  |
| LOC 13  | Hull Showing   |  |
| LOC 14  | Masts Showing  |  |
| LOC 15  | On Water Surface/Floating                                |  |
| LOC 16  | Partially Submerged                                      |  |
| LOC 17  | Sunken/on sea bottom                                     |  |
| LOC 19  | Above Surface/Does not Cover (Height Unknown)            |  |
| LOC 20  | Funnel Showing   |  |
| LOC 21  | Superstructure showing                                   |  |
| LOC 22  | Off Shore  |  |
| LOC 23  | Below sea bottom   |  |
| LOC 24  | Suspended or elevated above sea bottom                   |  |
| LOC 25  | Suspended/Elevation above Ground or Water Surface        |  |
| LOC 28  | Masts and Funnel Showing                                 |  |
| LOC 30  | Non-Floating   |  |
| LOC 31  | Elevated   |  |
| LOC 32  | Depressed  |  |
| LOC 33  | Not submerged  |  |
| LOC 34  | Inland   |  |
| LOC 35  | Overhead   |  |
| LOC 36  | Height Above Bottom                                      |  |
| LOC 37  | Exact Position Known                                     |  |
| LOC 38  | Exact Position Unknown                                   |  |
| LOC 39  | Depth Unknown  |  |
| LOC 998 | Not applicable   |  |
| LOC 999 | Other  |  |

| MCC    | Surface Material Category (or Material Composition Category) |  |
|--------|--|--|
|        | Characteristics of primary material composition of feature.  |  |
| MCC 0  | Unknown  |  |
| MCC 4  | Ash  |  |
| MCC 5  | Asphalt  |  |
| MCC 6  | Basalt   |  |
| MCC 7  | Bedrock  |  |
| MCC 8  | Boulders   |  |
| MCC 9  | Brick  |  |
| MCC 10 | Calcareous   |  |
| MCC 11 | Cement   |  |

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 12 | Chalk                          |
| MCC | 13 | Chemical                       |
| MCC | 14 | Cinders                        |
| MCC | 15 | Cirripedia                     |
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |
| MCC | 66 | Mussels                        |
| MCC | 67 | Oil                            |
| MCC | 68 | Oil Blister                    |
| MCC | 69 | Ooze                           |



|     |     |                      |
|-----|-----|----------------------|
| MCC | 70  | Oysters              |
| MCC | 71  | Paper                |
| MCC | 72  | Part Metal           |
| MCC | 73  | Pebbles              |
| MCC | 74  | Plastic              |
| MCC | 75  | Polyzoa              |
| MCC | 76  | Porphyry             |
| MCC | 77  | Prestressed Concrete |
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |
| MCC | 999 | Other                |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

|            | Units  | Format      | Range   | Increment | Max Chars |
|------------|--|-------------|---|-----------|-----------|
|            |  | Text String | Lexical   |           | 80        |
| <i>OIT</i> | <i>Object Illumination Type</i><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features. |             |   |           |           |
|            | OIT  | 1           | SELF  |           |           |
|            | OIT  | 2           | SUN   |           |           |
|            | OIT  | 3           | NOSUN   |           |           |
| <i>RFL</i> | <i>Reflectance</i><br>Ratio of radiant energy reflected by and object to the amount incident upon it.  |             |   |           |           |
|            | Units  | Format      | Range   | Increment | Max Char  |
|            |  | Real (f7.6) | 0.0 .. 1.0  |           |           |
| <i>SER</i> | <i>Self Emitter</i><br>Indicates that an object has self heating characteristics<br>SER T<br>SER F   |             |   |           |           |
| <i>SMS</i> | <i>Surface Material Subtype</i><br>Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.                 |             |   |           |           |
|            | SMS  | 0           | Unknown   |           |           |
|            | SMS  | 1           | GW Well graded gravels or gravel-sand mixtures        |           |           |
|            | SMS  | 2           | GP Poorly graded gravels or gravel-sand mixtures      |           |           |
|            | SMS  | 3           | GM Silty gravels, gravel-sand-silt mixtures           |           |           |
|            | SMS  | 4           | GC Clayey gravels, gravel-sand-clay mixture           |           |           |
|            | SMS  | 5           | SW Well graded sand or gravelly sands                 |           |           |
|            | SMS  | 6           | SP Poorly graded sands or gravelly sands              |           |           |
|            | SMS  | 7           | SM Silty sands, sand-silt mixture.                    |           |           |
|            | SMS  | 8           | SC Clayey sands, sand-clay mixtures                   |           |           |
|            | SMS  | 9           | ML Inorganic silts and very fine sands                |           |           |
|            | SMS  | 10          | CL Inorganic clays of low to medium plasticity        |           |           |
|            | SMS  | 11          | OL Organic silts and organic silty clays              |           |           |
|            | SMS  | 12          | CH Inorganic clays of high plasticity, fat clays      |           |           |
|            | SMS  | 13          | MH Inorganic silts, micaceous or diatomaceous         |           |           |
|            | SMS  | 14          | OH Organic clays of medium to high plasticity         |           |           |
|            | SMS  | 15          | PT Peat and other highly organic soils                |           |           |
|            | SMS  | 17          | ML-CL Soil type having both ML and CL characteristics |           |           |
|            | SMS  | 18          | Evaporites  |           |           |
|            | SMS  | 19          | Alkali  |           |           |
|            | SMS  | 20          | Asphalt   |           |           |
|            | SMS  | 21          | Ash   |           |           |
|            | SMS  | 22          | Basalt  |           |           |
|            | SMS  | 23          | Bedrock   |           |           |
|            | SMS  | 24          | Boulders  |           |           |
|            | SMS  | 25          | Calcareous  |           |           |
|            | SMS  | 26          | Chalk   |           |           |
|            | SMS  | 27          | Cinders   |           |           |
|            | SMS  | 28          | Cirripedia  |           |           |
|            | SMS  | 29          | Clay  |           |           |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |
| SMS | 86 | Shells                   |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*      *Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP*      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

**TXT**      Text Attribute  
 Narrative or other description.

| TXT   | 0           | Actual Value |           |          |
|-------|-------------|--------------|-----------|----------|
| Units | Format      | Range        | Increment | Max Char |
|       | Text String | Lexical      |           | 256      |

**VRR**      Vertical Reference Category  
 Relative location referenced to sounding datum, unless otherwise indicated.

|     |   |  |
|-----|---|--|
| VRR | 0 | Unknown                                      |
| VRR | 1 | Above Surface/Does not cover (At High Water) |
| VRR | 2 | Awash at Sounding Datum                      |
| VRR | 4 | Below Surface/Submerged                      |
| VRR | 8 | Covers and Uncovers                          |
| VRR | 9 | Not Applicable                               |

**WID**      Width  
 A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

| WID    | 0             | Actual Value |           |           |
|--------|---------------|--------------|-----------|-----------|
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

**ZV2**      Highest Z-value  
 Elevation above a given datum to the highest portion of the feature.

| ZV2    | 0             | Actual Value   |           |           |
|--------|---------------|----------------|-----------|-----------|
| Units  | Format        | Range          | Increment | Max Chars |
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

# **Building Feature Class**

**ID**

## **F-CODE/DESCRIPTION**

AL015 Building  
 AL170 Plaza/City Square - An open area which serves as a public square in a city or town.  
 AL045 Complex Outline - An outline delimiting an area in which two or more like features have the same function.  
 AL018 Building Superstructure Addition  
 AL019 Shed  
 AL020 Built-Up Area  
 AL210 Snow Shed/Rock Shed

**ABS**      Absorptivity  
 Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC Accuracy Category  
Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

AOO Angle of Orientation  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|         |   |               |       |           |           |
|---------|---|---------------|-------|-----------|-----------|
| AOO     | 0 | Actual Value  |       |           |           |
| Units   |   | Format        | Range | Increment | Max Chars |
| Degrees |   | Short Integer | 0-360 | 1 DEG     |           |

ARA Area Coverage Attribute  
The absolute area within the delineation of the feature.

|            |   |               |          |                  |          |
|------------|---|---------------|----------|------------------|----------|
| ARA        | 0 | Actual Value  |          |                  |          |
| Units      |   | Format        | Range    | Increment        | Max Char |
| Sq. Meters |   | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   |   | Short Integer | 0±32,767 | 1 HA             |          |

ATN Aids to Navigation  
Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

BFC Building Function Category  
Type or purpose of the building.

|     |    |  |
|-----|----|--|
| BFC | 0  | Unknown                                      |
| BFC | 1  | Fabrication Structures                       |
| BFC | 2  | Government Building                          |
| BFC | 3  | Capitol Building                             |
| BFC | 4  | Castle                                       |
| BFC | 5  | Government Administration Building           |
| BFC | 6  | Hospital                                     |
| BFC | 7  | House of Worship                             |
| BFC | 8  | Military Administration /Operations Building |
| BFC | 9  | Museum                                       |
| BFC | 10 | Observatory                                  |
| BFC | 11 | Palace                                       |
| BFC | 12 | Police Station                               |
| BFC | 13 | Prison                                       |
| BFC | 14 | Ranger Station                               |
| BFC | 15 | School                                       |

|     |    |  |
|-----|----|--|
| BFC | 16 | House  |
| BFC | 17 | Multi Unit Dwelling                            |
| BFC | 18 | Cemetery Building                              |
| BFC | 19 | Farm Building                                  |
| BFC | 20 | Greenhouse                                     |
| BFC | 21 | Garage   |
| BFC | 22 | Watermill /Gristmill                           |
| BFC | 23 | Wind Tunnel                                    |
| BFC | 24 | Warehouse                                      |
| BFC | 25 | Roundhouse                                     |
| BFC | 26 | Railroad Storage /Repair Facility              |
| BFC | 27 | Depot Terminal                                 |
| BFC | 28 | Administration Building                        |
| BFC | 29 | Aircraft Maintenance Shop                      |
| BFC | 30 | Hangar   |
| BFC | 31 | Customs House                                  |
| BFC | 33 | Health Office                                  |
| BFC | 34 | Firing Range                                   |
| BFC | 35 | Post Office                                    |
| BFC | 36 | Barracks/Dormitory                             |
| BFC | 37 | Fire Station                                   |
| BFC | 38 | Jail   |
| BFC | 39 | Guardhouse                                     |
| BFC | 40 | Telephone Switching Station                    |
| BFC | 50 | Church   |
| BFC | 51 | Market   |
| BFC | 52 | Town Hall                                      |
| BFC | 53 | Bank   |
| BFC | 54 | Service/Refueling Station                      |
| BFC | 55 | Yacht Club/Sailing Club                        |
| BFC | 56 | Public Inn                                     |
| BFC | 57 | Restaurant                                     |
| BFC | 58 | Observation                                    |
| BFC | 59 | Research and Development Lab/Research Facility |
| BFC | 60 | University/College                             |
| BFC | 61 | Courthouse                                     |
| BFC | 62 | Legation                                       |
| BFC | 63 | Mission  |
| BFC | 64 | Chancery                                       |
| BFC | 65 | Ambassadorial Residence                        |
| BFC | 66 | Embassy  |
| BFC | 67 | Consulate                                      |
| BFC | 68 | Guard House                                    |
| BFC | 69 | Guard Shack/Guard Room                         |
| BFC | 70 | Kennel   |
| BFC | 71 | Oil Mill (Vegetable)                           |
| BFC | 72 | Aerator  |
| BFC | 73 | Carpentry                                      |
| BFC | 74 | Saw-mill                                       |
| BFC | 75 | Kiln/Oven                                      |
| BFC | 76 | Signal Box/Railway Signalman's House           |
| BFC | 77 | Harbor Masters Office                          |
| BFC | 78 | Marine Police                                  |
| BFC | 79 | Rescue   |

|     |     |                                  |
|-----|-----|----------------------------------|
| BFC | 80  | Port Control                     |
| BFC | 81  | Maritime Station                 |
| BFC | 82  | Lighthouse                       |
| BFC | 83  | Power Generation                 |
| BFC | 84  | Filtration Plant                 |
| BFC | 85  | News Paper Plant                 |
| BFC | 86  | Telephone Exchange (Main)        |
| BFC | 87  | Auditorium                       |
| BFC | 88  | Opera House                      |
| BFC | 89  | Processing/Treatment             |
| BFC | 90  | Pumphouse                        |
| BFC | 91  | Mobile Home                      |
| BFC | 92  | Weather Station                  |
| BFC | 93  | Dependents Housing/Bivouac Area  |
| BFC | 94  | Railroad Station                 |
| BFC | 95  | Hotel                            |
| BFC | 96  | Diplomatic Building              |
| BFC | 97  | Trading Post                     |
| BFC | 98  | Shed                             |
| BFC | 99  | Battery                          |
| BFC | 100 | Medical Center                   |
| BFC | 101 | Municipal Hall                   |
| BFC | 102 | Oil/Gas Facilities Building      |
| BFC | 103 | Outbuilding                      |
| BFC | 104 | Paper/Pulp Mill                  |
| BFC | 105 | Reformatory                      |
| BFC | 106 | Sanitorium                       |
| BFC | 107 | Satellite Tracking Station       |
| BFC | 108 | Seminary                         |
| BFC | 109 | Senior Citizen's Home            |
| BFC | 110 | Shipyards                        |
| BFC | 111 | Sportsplex                       |
| BFC | 112 | Steel Mill                       |
| BFC | 113 | Weigh Scale (Highway)            |
| BFC | 114 | Non-Christian Place of Worship   |
| BFC | 115 | Hostel                           |
| BFC | 116 | Factory                          |
| BFC | 117 | Motel                            |
| BFC | 118 | Community Center                 |
| BFC | 119 | City Hall                        |
| BFC | 120 | Automobile Plant                 |
| BFC | 121 | Armory                           |
| BFC | 122 | Shopping Center                  |
| BFC | 123 | Correctional Institute           |
| BFC | 124 | Repair Facility                  |
| BFC | 125 | Barn/Machinery Shed              |
| BFC | 126 | Astronomical Station             |
| BFC | 127 | Theater                          |
| BFC | 128 | Library                          |
| BFC | 723 | Combined Fire and Police Station |
| BFC | 999 | Other                            |

CCC

Color Code Category

CCC 0 Unknown/Not applicable



|     |     |               |
|-----|-----|---------------|
| CCC | 1   | Black         |
| CCC | 2   | Blue          |
| CCC | 3   | Brown         |
| CCC | 4   | Gray          |
| CCC | 5   | Green         |
| CCC | 7   | Chocolate     |
| CCC | 9   | Orange        |
| CCC | 12  | Red           |
| CCC | 14  | Violet        |
| CCC | 15  | White         |
| CCC | 19  | Yellow        |
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|     |     |                                    |
|-----|-----|------------------------------------|
| CIC |     | Color Intensity Category           |
|     |     | Identifies the intensity of color. |
| CIC | 0   | Unknown                            |
| CIC | 1   | Dark                               |
| CIC | 2   | Light                              |
| CIC | 999 | Other                              |

|     |     |   |
|-----|-----|---|
| COC |     | Conspicuous Category  |
|     |     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |
| COC | 0   | Unknown   |
| COC | 1   | Conspicuous from sea  |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK  |
| COC | 3   | Radar Conspicuous from sea  |
| COC | 4   | Conspicuous from land   |
| COC | 5   | Conspicuous from air  |
| COC | 6   | Inconspicuous   |
| COC | 7   | Generally Conspicuous   |
| COC | 8   | Not visual conspicuous  |
| COC | 9   | Visual conspicuous  |
| COC | 10  | Not radar conspicuous   |
| COC | 999 | Other   |

|     |  |   |
|-----|--|---|
| COL |  | Character of Light  |
|     |  | Any identifier composed of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR]. |

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| COL          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|              | Text String   | Lexical      |                  | 80               |

DFR

*Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

DMR

Density Measure (% of Roof Cover)

Roof cover measured by percent within area of feature.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| DMR          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Percent      | Short Integer | 0-100        | 1 %              |                  |

DY1

*Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2

*Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3

*Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

|              |               |                    |                  |                 |
|--------------|---------------|--------------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>       | <u>Increment</u> | <u>Max Char</u> |
|              | Real          | 0.0 .. 1.93428E+25 |                  |                 |

|     |  |                         |
|-----|--|-------------------------|
| EXS | Existence Category                     |                         |
|     | The state or condition of the feature. |                         |
| EXS | 0                                      | Unknown                 |
| EXS | 1                                      | Definite                |
| EXS | 2                                      | Doubtful                |
| EXS | 3                                      | Reported                |
| EXS | 5                                      | Under Construction      |
| EXS | 6                                      | Abandoned/Disused       |
| EXS | 7                                      | Destroyed               |
| EXS | 10                                     | Proposed                |
| EXS | 11                                     | Temporary               |
| EXS | 12                                     | Alternate               |
| EXS | 18                                     | Permanent               |
| EXS | 25                                     | Not Maintained          |
| EXS | 26                                     | Maintained              |
| EXS | 27                                     | Closed/Locked           |
| EXS | 28                                     | Operational             |
| EXS | 30                                     | Not Isolated            |
| EXS | 31                                     | Isolated                |
| EXS | 33                                     | Ruined                  |
| EXS | 35                                     | Other                   |
| EXS | 44                                     | Approximate/About       |
| EXS | 45                                     | Natural                 |
| EXS | 46                                     | Man-made                |
| EXS | 47                                     | Swept                   |
| EXS | 48                                     | Controlled              |
| EXS | 49                                     | Non-Controlled          |
| EXS | 50                                     | Non-Tidal               |
| EXS | 51                                     | Tidal/Tidal Fluctuation |
| EXS | 52                                     | Dissipating             |
| EXS | 53                                     | Incomplete              |
| EXS | 54                                     | Antique/Ancient         |
| EXS | 55                                     | Unexamined/Unsurveyed   |
| EXS | 56                                     | Unattended/Unwatched    |
| EXS | 59                                     | Not Usable              |
| EXS | 60                                     | Indefinite (Shoreline)  |
| EXS | 61                                     | Definite Shoreline      |
| EXS | 62                                     | Partially Destroyed     |
| EXS | 65                                     | Inactive                |
| EXS | 998                                    | Not Applicable          |
| EXS | 999                                    | Other                   |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

HGT      Height Above Surface Level  
Distance measured from the lowest point of the base at ground or water level  
(downhill side/downstream side) to the tallest point of the feature.

|        |               |              |           |           |
|--------|---------------|--------------|-----------|-----------|
| HGT    | 0             | Actual Value |           |           |
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

|     |                                |                    |
|-----|--------------------------------|--------------------|
| HWT | House of Worship Type          |                    |
|     | Type of house of worship used. |                    |
| HWT | 0                              | Unknown            |
| HWT | 2                              | Cathedral          |
| HWT | 3                              | Chapel             |
| HWT | 4                              | Church             |
| HWT | 5                              | Marabout           |
| HWT | 6                              | Minaret            |
| HWT | 7                              | Monastery, Convent |
| HWT | 9                              | Mosque             |
| HWT | 11                             | Pagoda             |
| HWT | 14                             | Shrine             |
| HWT | 15                             | Tabernacle         |
| HWT | 16                             | Temple             |
| HWT | 20                             | Synagouge          |
| HWT | 21                             | Stupa              |
| HWT | 22                             | Not Applicable     |
| HWT | 23                             | Any                |

|     |   |         |            |                    |
|-----|---|---------|------------|--------------------|
| IMC | Internal Material Category                        |         |            |                    |
|     | Category code for material internal to an object. |         |            |                    |
|     | Units   | Format  | Range      | Increment Max Char |
|     |   | Integer | 1 .. 32767 |                    |

|     |  |               |          |                     |
|-----|--|---------------|----------|---------------------|
| LEN | Length/Diameter of Point Feature   |               |          |                     |
|     | A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments. |               |          |                     |
| LEN | 0  | Actual Value  |          |                     |
|     | Units  | Format        | Range    | Increment Max Chars |
|     | Meters   | Short Integer | 0±32,767 | 1 M                 |

|     |   |  |  |  |
|-----|---|--|--|--|
| LLE | Low Level Effects   |  |  |  |
|     | Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter. |  |  |  |
| LLE | T   |  |  |  |
| LLE | F   |  |  |  |

|     |  |  |  |  |
|-----|--|--|--|--|
| LLL | Long Lineal  |  |  |  |
|     | Reference to a point feature which could potentially look like a long linear feature by radar. |  |  |  |
|     | Applies to point features  |  |  |  |
| LLL | T  |  |  |  |
| LLL | F  |  |  |  |

|     |  |         |                |                    |
|-----|--|---------|----------------|--------------------|
| LNI | Layer Number   |         |                |                    |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual). |         |                |                    |
|     | Units  | Format  | Range          | Increment Max Char |
|     |  | Integer | 0.. 2147483647 |                    |

|     |   |               |                   |                  |                  |
|-----|---|---------------|-------------------|------------------|------------------|
| LN2 | <i>Layer Number (IR)</i><br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).    |               |                   |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>      | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Integer       | 0.. 2147483647    |                  |                  |
| LN3 | <i>Layer Number (Radar)</i><br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |                   |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>      | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Integer       | 0.. 2147483647    |                  |                  |
| NAM | Name<br>Any Identifier or code.   |               |                   |                  |                  |
|     | NAM   | 0             | Actual Value      |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>      | <u>Increment</u> | <u>Max Chars</u> |
|     |   | Text String   | Lexical           |                  | 80               |
| OIT | <i>Object Illumination Type</i><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features.  |               |                   |                  |                  |
|     | OIT   | 1             | SELF              |                  |                  |
|     | OIT   | 2             | SUN               |                  |                  |
|     | OIT   | 3             | NOSUN             |                  |                  |
| PHT | Predominant Height<br>Height of 51% or more of the feature. If not obtainable, then the average height of the feature will be used.   |               |                   |                  |                  |
|     | PHT   | 0             | Actual Value      |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>      | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters  | Short Integer | 0±32,767          | 1 M              |                  |
| PPL | Populated Place Category<br>The number of people within a feature (e.g. administrative and built-up areas).   |               |                   |                  |                  |
|     | PPL   | 0             | Actual Value      |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>      | <u>Increment</u> | <u>Max Chars</u> |
|     | Persons   | Short Integer | 0±32,767          | 1 PERSON         |                  |
| PPT | Populated Place Type<br>The type of populated place.  |               |                   |                  |                  |
|     | PPT   | 0             | Unknown           |                  |                  |
|     | PPT   | 1             | Native Settlement |                  |                  |
|     | PPT   | 2             | Shanty town       |                  |                  |
|     | PPT   | 3             | Tent Dwellings    |                  |                  |
|     | PPT   | 99            | Inland Village    |                  |                  |
|     | PPT   | 999           | Other             |                  |                  |

REL Religious Denomination  
Name of religious order at site.

|     |     |                       |
|-----|-----|-----------------------|
| REL | 0   | Unknown               |
| REL | 1   | Buddhist              |
| REL | 2   | Moslem                |
| REL | 3   | Roman Catholic        |
| REL | 4   | Christian (undefined) |
| REL | 5   | Judaism               |
| REL | 6   | Greek Orthodox        |
| REL | 7   | Protestant            |
| REL | 8   | Shinto                |
| REL | 999 | Other                 |

RFL *Reflectance*  
Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SER *Self Emitter*  
Indicates that an object has self heating characteristics  
SER T  
SER F

SMS *Surface Material Subtype*  
Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 27 | Cinders                  |
| SMS | 28 | Cirripedia               |
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 84  | Scoria            |
| SMS | 85  | Sewage            |
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*SSR*      Structure Shape of Roof  
Roof shape.  
SSR    0      Unknown  
SSR    6      Conical /Peaked/NUN  
SSR    38      Curved /Round (Quonset)  
SSR    40      Dome  
SSR    41      Flat  
SSR    42      Gable (pitched)  
SSR    43      VALUE INTENTIONALLY LEFT BLANK  
SSR    44      VALUE INTENTIONALLY LEFT BLANK  
SSR    45      VALUE INTENTIONALLY LEFT BLANK  
SSR    46      VALUE INTENTIONALLY LEFT BLANK  
SSR    47      Sawtooth  
SSR    48      VALUE INTENTIONALLY LEFT BLANK  
SSR    49      VALUE INTENTIONALLY LEFT BLANK  
SSR    50      With Monitor



|     |     |                                |
|-----|-----|--------------------------------|
| SSR | 51  | With Steeple                   |
| SSR | 55  | Flat with Monitor              |
| SSR | 58  | VALUE INTENTIONALLY LEFT BLANK |
| SSR | 64  | Gable with Monitor             |
| SSR | 65  | VALUE INTENTIONALLY LEFT BLANK |
| SSR | 66  | VALUE INTENTIONALLY LEFT BLANK |
| SSR | 71  | VALUE INTENTIONALLY LEFT BLANK |
| SSR | 72  | VALUE INTENTIONALLY LEFT BLANK |
| SSR | 77  | With Cupola                    |
| SSR | 78  | With Turret                    |
| SSR | 79  | With Tower                     |
| SSR | 80  | With Minaret                   |
| SSR | 999 | Other                          |

STA      Station Type Category (Maritime)

Equipment or activity at site.

|     |     |                                |
|-----|-----|--------------------------------|
| STA | 0   | Unknown                        |
| STA | 1   | Coast Guard                    |
| STA | 2   | Fireboat                       |
| STA | 3   | Marine Police                  |
| STA | 4   | Ice Signal                     |
| STA | 5   | Lifeboat/Rescue                |
| STA | 6   | Port Control                   |
| STA | 7   | VALUE INTENTIONALLY LEFT BLANK |
| STA | 8   | VALUE INTENTIONALLY LEFT BLANK |
| STA | 9   | VALUE INTENTIONALLY LEFT BLANK |
| STA | 10  | VALUE INTENTIONALLY LEFT BLANK |
| STA | 11  | Pilot                          |
| STA | 12  | VALUE INTENTIONALLY LEFT BLANK |
| STA | 13  | Signal                         |
| STA | 14  | Signal Mast                    |
| STA | 15  | Storm Signal                   |
| STA | 16  | Stream Signal                  |
| STA | 17  | Tide Signal                    |
| STA | 18  | Time Ball                      |
| STA | 19  | Time Signal                    |
| STA | 20  | Unmanned Oceanographic         |
| STA | 21  | Weather signal                 |
| STA | 22  | Fog Signal                     |
| STA | 23  | VALUE INTENTIONALLY LEFT BLANK |
| STA | 25  | Semaphore                      |
| STA | 26  | STA                            |
| STA | 27  | Tidal Current Signal           |
| STA | 28  | Traffic Signal                 |
| STA | 29  | Bridge Signal                  |
| STA | 30  | Lock Signal                    |
| STA | 31  | VALUE INTENTIONALLY LEFT BLANK |
| STA | 32  | International Port Signals     |
| STA | 33  | Firing Practice Signal Station |
| STA | 34  | Signal Station, Traffic        |
| STA | 35  | Warning                        |
| STA | 999 | Other                          |

|     |  |               |                                |                  |                 |
|-----|--|---------------|--------------------------------|------------------|-----------------|
| TMR | <i>Texture Map Reflectance</i>   |               |                                |                  |                 |
|     | Reflectance value assigned to a texture map  |               |                                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Real (f7.6)   | 0.0 .. 1.0                     |                  |                 |
| TRL | <i>Translucency</i>  |               |                                |                  |                 |
|     | The degree to which a surface is transparent.  |               |                                |                  |                 |
|     | Type - Real(6 sd)                      Range - 0.0 .. 100.0                            |               |                                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Real (f7.3)   | 0.0 .. 100.0                   |                  |                 |
| TRV | <i>Transmissivity</i>  |               |                                |                  |                 |
|     | Ratio of energy transmitted by an object to the amount of energy incident upon it.     |               |                                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Real (f7.6)   | 0.0 .. 1.0                     |                  |                 |
| TTP | <i>Texture Type</i>  |               |                                |                  |                 |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC). |               |                                |                  |                 |
|     | TTP  | 1             | RGB                            |                  |                 |
|     | TTP  | 2             | GRAY                           |                  |                 |
|     | TTP  | 3             | MULTI                          |                  |                 |
|     | TTP  | 4             | SMFD                           |                  |                 |
| TXT | <i>Text Attribute</i>  |               |                                |                  |                 |
|     | Narrative or other description.  |               |                                |                  |                 |
|     | TXT    0            Actual Value   |               |                                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |  | Text String   | Lexical                        |                  | 256             |
| USE | <i>Usage</i>   |               |                                |                  |                 |
|     | Use (identifies the primary user, function, or controlling authority).                 |               |                                |                  |                 |
|     | USE  | 0             | Unknown                        |                  |                 |
|     | USE  | 4             | National                       |                  |                 |
|     | USE  | 5             | State                          |                  |                 |
|     | USE  | 6             | Private                        |                  |                 |
|     | USE  | 7             | Tribal                         |                  |                 |
|     | USE  | 8             | Military                       |                  |                 |
|     | USE  | 10            | Other                          |                  |                 |
|     | USE  | 11            | Motel/Hotel                    |                  |                 |
|     | USE  | 12            | Apartment                      |                  |                 |
|     | USE  | 13            | Open                           |                  |                 |
|     | USE  | 14            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | USE  | 15            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | USE  | 16            | City                           |                  |                 |
|     | USE  | 17            | Advertising Billboard          |                  |                 |
|     | USE  | 18            | Scoreboard                     |                  |                 |
|     | USE  | 19            | Highway Sign                   |                  |                 |
|     | USE  | 20            | Closed                         |                  |                 |
|     | USE  | 21            | Restricted                     |                  |                 |
|     | USE  | 22            | Joint Military/Civilian        |                  |                 |
|     | USE  | 23            | International                  |                  |                 |

|     |     |                                    |
|-----|-----|------------------------------------|
| USE | 24  | Unidentified Aircraft Landing Area |
| USE | 25  | Federal                            |
| USE | 26  | Primary/1st Order                  |
| USE | 30  | Secondary/2nd Order                |
| USE | 31  | Tertiary/3rd Order                 |
| USE | 32  | Insular                            |
| USE | 33  | Provincial                         |
| USE | 37  | Interstate                         |
| USE | 41  | Industrial                         |
| USE | 42  | Commercial                         |
| USE | 43  | Institutional                      |
| USE | 44  | Residential                        |
| USE | 45  | Agricultural                       |
| USE | 48  | Decoy                              |
| USE | 49  | Civilian/Public                    |
| USE | 50  | Limited                            |
| USE | 51  | Telegraph                          |
| USE | 52  | Telephone                          |
| USE | 53  | Power                              |
| USE | 57  | Marine                             |
| USE | 60  | Avalanche                          |
| USE | 61  | Refugee                            |
| USE | 62  | Prisoner                           |
| USE | 68  | Animal sanctuary                   |
| USE | 69  | Levee/Dike                         |
| USE | 70  | Reserve/Reservation                |
| USE | 73  | Terminus/Terminal                  |
| USE | 74  | Low Altitude enroute               |
| USE | 75  | High Altitude Enroute              |
| USE | 76  | Low and High Altitude Enroute      |
| USE | 77  | Short Take-off Landing Approach    |
| USE | 78  | Visual Approach                    |
| USE | 79  | Non-Precision Instrument Approach  |
| USE | 80  | Precision Instrument Approach      |
| USE | 81  | Entry                              |
| USE | 82  | Exit                               |
| USE | 83  | Transaction                        |
| USE | 84  | Feeder                             |
| USE | 85  | Initial Approach Fix               |
| USE | 86  | Final Approach Fix                 |
| USE | 87  | Visual Descent Point               |
| USE | 88  | Missed Approach Point              |
| USE | 89  | Radar                              |
| USE | 90  | Mileage Break Down                 |
| USE | 91  | NAVAID Changeover                  |
| USE | 92  | Altimeter Change                   |
| USE | 93  | Compulsory Reporting Points        |
| USE | 94  | Non-Compulsory Reporting Points    |
| USE | 95  | Alert Apron/Hardstand              |
| USE | 96  | Operational Apron/Hardstand        |
| USE | 97  | Hanger/Apron                       |
| USE | 98  | Base Flight Apron                  |
| USE | 99  | Engine Test Pad/Apron              |
| USE | 100 | Transient Apron                    |

|     |     |   |
|-----|-----|---|
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

USP      The predominant geometric configuration of streets found within the delineated area of the feature.

|     |   |  |
|-----|---|--|
| USP | 0 | Unknown  |
| USP | 2 | Rectangular/Grid-Regular                           |
| USP | 3 | Rectangular/Grid-Irregular                         |
| USP | 4 | Curvilinear (cluster)                              |
| USP | 6 | Concentric / Radial-Regular                        |
| USP | 7 | Concentric / Radial-Irregular                      |
| USP | 9 | Mixed Curvilinear (cluster) and Rectangular (grid) |

|     |    |   |
|-----|----|---|
| USP | 10 | Mixed Concentric / Radial and Rectangular/ (grid)   |
| USP | 11 | Mixed Curvilinear (cluster) and Concentric / Radial |
| USP | 12 | Other   |
| USP | 13 | Linear Strip  |

**WID** Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| WID          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

**ZV2** Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|              |               |                |                  |                  |  |
|--------------|---------------|----------------|------------------|------------------|--|
| ZV2          | 0             | Actual Value   |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | -400 to 30,000 | 1 M              |                  |  |

#### Miscellaneous Cultural Object Feature Class

**ID**

#### F-CODE/DESCRIPTION

AL050 US Display Sign  
AL060 Dragon Teeth  
AL073 Flagstaff/Flagpole  
AL080 Gantry  
AL110 US Light Standard/Light Support  
AL141 Telescope - An apparatus used for observing distant objects or phenomena.  
AL155 Overhead Obstruction Location  
An undelineated obstruction location such as underpasses, overhead pipelines, building overhangs, and other covered traveled ways.  
AL195 Ramp - An inclined plane usually man-made for moving between two levels.  
AL220 US Steeple  
AL240 Tower (Non- Communication)  
AL241 Tower (General) - A relatively tall structure of undefined purpose.  
AT100 Electrified Railroad Pylon

**ABS** *Absorptivity*

Ratio of radiant (thermal) energy to the energy incident upon it.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

**ACC**

Accuracy Category  
Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |

ACC 7 Precise  
ACC 8 Abrogated

AOO Angle of Orientation  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|     |              |               |              |                  |                  |
|-----|--------------|---------------|--------------|------------------|------------------|
| AOO | 0            | Actual Value  |              |                  |                  |
|     | <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Degrees      | Short Integer | 0-360        | 1 DEG            |                  |

ATN Aids to Navigation  
Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

BFC Building Function Category

CCC Color Code Category

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

CIC Color Intensity Category  
Identifies the intensity of color.

|     |   |         |
|-----|---|---------|
| CIC | 0 | Unknown |
| CIC | 1 | Dark    |

|     |     |       |
|-----|-----|-------|
| CIC | 2   | Light |
| CIC | 999 | Other |

COC

**Conspicuous Category**

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

COL

**Character of Light**

DFR

**Diffuse Reflectance**

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1

**Directivity**

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2

**Directivity (IR)**

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3

**Directivity (Radar)**

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |   |         |
|-----|---|---------|
| DY3 | 0 | Unknown |
| DY3 | 1 | Uni     |
| DY3 | 2 | Bi      |

|     |     |       |
|-----|-----|-------|
| DY3 | 3   | Omni  |
| DY3 | 999 | Other |

# *EMY*

## *Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

# *EXI*

## *Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

# EXS

## Existence Category

The state or condition of the feature.

|     |    |                         |
|-----|----|-------------------------|
| EXS | 0  | Unknown                 |
| EXS | 1  | Definite                |
| EXS | 2  | Doubtful                |
| EXS | 3  | Reported                |
| EXS | 5  | Under Construction      |
| EXS | 6  | Abandoned/Disused       |
| EXS | 7  | Destroyed               |
| EXS | 10 | Proposed                |
| EXS | 11 | Temporary               |
| EXS | 12 | Alternate               |
| EXS | 18 | Permanent               |
| EXS | 25 | Not Maintained          |
| EXS | 26 | Maintained              |
| EXS | 27 | Closed/Locked           |
| EXS | 28 | Operational             |
| EXS | 30 | Not Isolated            |
| EXS | 31 | Isolated                |
| EXS | 33 | Ruined                  |
| EXS | 35 | Other                   |
| EXS | 44 | Approximate/About       |
| EXS | 45 | Natural                 |
| EXS | 46 | Man-made                |
| EXS | 47 | Swept                   |
| EXS | 48 | Controlled              |
| EXS | 49 | Non-Controlled          |
| EXS | 50 | Non-Tidal               |
| EXS | 51 | Tidal/Tidal Fluctuation |
| EXS | 52 | Dissipating             |
| EXS | 53 | Incomplete              |
| EXS | 54 | Antique/Ancient         |
| EXS | 55 | Unexamined/Unsurveyed   |
| EXS | 56 | Unattended/Unwatched    |
| EXS | 59 | Not Usable              |
| EXS | 60 | Indefinite (Shoreline)  |
| EXS | 61 | Definite Shoreline      |



|     |     |                     |
|-----|-----|---------------------|
| EXS | 62  | Partially Destroyed |
| EXS | 65  | Inactive            |
| EXS | 998 | Not Applicable      |
| EXS | 999 | Other               |

*FOT Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*GUG Guyed or Unguyed Category*  
Presence of support wires.  
GUG 0 Unknown  
GUG 1 Guyed  
GUG 2 Unguyed  
GUG 999 Other

*HGT Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT 0 Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

*IMC Internal Material Category*  
Category code for material internal to an object.  

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

*LEN Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0 Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

*LLE Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

*LLL Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

**LN1**      *Layer Number*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN2**      *Layer Number (IR)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN3**      *Layer Number (Radar)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**NAM**      Name  
 Any Identifier or code.

| Units | Format       | Range   | Increment | Max Chars |
|-------|--------------|---------|-----------|-----------|
| NAM 0 | Actual Value |         |           |           |
|       | Text String  | Lexical |           | 80        |

**LOC**      Location Category  
 Status of feature relative to surrounding area or water.

|        |   |
|--------|---|
| LOC 0  | Unknown                                       |
| LOC 1  | Above Surface/Does not Cover (Height Known)   |
| LOC 2  | Awash at Chart Datum                          |
| LOC 3  | Dries/Covers (Height Unknown)                 |
| LOC 4  | Below Surface /Submerged/Underground          |
| LOC 5  | Covered < 20 Meters                           |
| LOC 6  | Covered ≥ 20 Meters but < 30 Meters           |
| LOC 7  | Covered ≥30 Meters                            |
| LOC 8  | On Ground Surface                             |
| LOC 9  | Depth Known                                   |
| LOC 10 | Depth Known ( Cleared by Drag Wire)           |
| LOC 11 | Depth Unknown But Safe to Depth Shown         |
| LOC 12 | VALUE INTENTIONALLY LEFT BLANK                |
| LOC 13 | Hull Showing                                  |
| LOC 14 | Masts Showing                                 |
| LOC 15 | On Water Surface/Floating                     |
| LOC 16 | Partially Submerged                           |
| LOC 17 | Sunken/on sea bottom                          |
| LOC 19 | Above Surface/Does not Cover (Height Unknown) |
| LOC 20 | Funnel Showing                                |
| LOC 21 | Superstructure showing                        |

|     |     |   |
|-----|-----|---|
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

OHC

Overhead Clearance Category

The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)

OHC 0 Actual Value

| Units  | Format         | Range | Increment | Max Chars |
|--------|----------------|-------|-----------|-----------|
| Meters | Floating Point |       | 0.1 M     |           |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

OOC

Overhead Obstruction Category

Type of overhead obstruction.

|     |   |                             |
|-----|---|-----------------------------|
| OOC | 0 | Unknown                     |
| OOC | 1 | Viaduct, frame construction |
| OOC | 2 | Viaduct, arc construction   |
| OOC | 3 | Roof                        |
| OOC | 4 | Powerline of railway        |
| OOC | 5 | High-tension powerline      |
| OOC | 6 | Bridge superstructure       |

PHT

Predominant Height

RFL

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER Self Emitter*  
Indicates that an object has self heating characteristics  
SER T  
SER F

*SHC Safe Horizontal Clearance*  
Minimum safe horizontal distance between adjacent bridge support structures on either side of a navigable channel passing under the bridge.

| SHC    | 0              | Actual Value |           |           |
|--------|----------------|--------------|-----------|-----------|
| Units  | Format         | Range        | Increment | Max Chars |
| Meters | Floating Point |              | 0.1 M     |           |

*SMS Surface Material Subtype*  
Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flysch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |
| SMS | 86 | Shells                   |
| SMS | 87 | Shingle                  |
| SMS | 88 | Silt                     |
| SMS | 89 | Silver                   |
| SMS | 90 | Slag                     |
| SMS | 91 | Sludge                   |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*SSC*      Structure Shape Category  
Geometric form, appearance, or configuration of the feature.

|     |    |                                |
|-----|----|--------------------------------|
| SSC | 0  | Unknown                        |
| SSC | 1  | Barrel, Ton                    |
| SSC | 2  | Blimp                          |
| SSC | 3  | Boat Hull (Float)              |
| SSC | 4  | Bullet                         |
| SSC | 5  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 6  | Conical /Peaked/NUN            |
| SSC | 7  | Cylindrical (Upright)/CAN      |
| SSC | 9  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 10 | Pillar, Spindle                |
| SSC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 12 | Pyramid                        |
| SSC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 14 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 15 | Solid/filled                   |
| SSC | 16 | Spar                           |
| SSC | 17 | Spherical (Hemispherical)      |
| SSC | 18 | Truss                          |
| SSC | 19 | With Radome                    |
| SSC | 20 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 21 | Artificial Mountain            |
| SSC | 22 | Crescent                       |
| SSC | 23 | Ferris Wheel                   |

|     |     |                                   |
|-----|-----|-----------------------------------|
| SSC | 24  | Enclosed                          |
| SSC | 25  | Roller coaster                    |
| SSC | 26  | Lateral                           |
| SSC | 27  | Mounds                            |
| SSC | 28  | Ripple                            |
| SSC | 29  | Star                              |
| SSC | 30  | Transverse                        |
| SSC | 31  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 33  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 34  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 35  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 36  | Windmotor                         |
| SSC | 38  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 40  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 46  | Open                              |
| SSC | 52  | 'A' Frame                         |
| SSC | 53  | 'H' Frame                         |
| SSC | 54  | 'T' Frame                         |
| SSC | 56  | 'Y' Frame                         |
| SSC | 57  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 58  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 59  | Telescoping Gasholder (Gasometer) |
| SSC | 60  | Mast                              |
| SSC | 61  | Tripod                            |
| SSC | 62  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 63  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 65  | Cylindrical with flat top         |
| SSC | 66  | Cylindrical with domed top        |
| SSC | 71  | Cylindrical/Peaked                |
| SSC | 73  | Superbuoy                         |
| SSC | 74  | 'T' Frame                         |
| SSC | 75  | Tetrahedron                       |
| SSC | 76  | Funnel                            |
| SSC | 77  | Arch                              |
| SSC | 78  | Multi-Arch                        |
| SSC | 79  | Round                             |
| SSC | 80  | Rectangular                       |
| SSC | 81  | Dragons Teeth                     |
| SSC | 82  | I-Beam                            |
| SSC | 83  | Square                            |
| SSC | 84  | Irregular                         |
| SSC | 85  | Diamond Shaped Buoy               |
| SSC | 86  | Oval                              |
| SSC | 87  | Dome                              |
| SSC | 107 | Tower                             |
| SSC | 108 | Scanner                           |
| SSC | 109 | Obelisk                           |
| SSC | 999 | Other                             |

TMR

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

|     |  |               |              |                                  |
|-----|--|---------------|--------------|----------------------------------|
| TRL | <i>Translucency</i>  |               |              |                                  |
|     | The degree to which a surface is transparent.  |               |              |                                  |
|     | Type - Real(6 sd)      Range - 0.0 .. 100.0  |               |              |                                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     |  | Real (f7.3)   | 0.0 .. 100.0 |                                  |
| TRV | <i>Transmissivity</i>  |               |              |                                  |
|     | Ratio of energy transmitted by an object to the amount of energy incident upon it.     |               |              |                                  |
|     | Type - Real(6 sd)      Range - 0.0 .. 1.0  |               |              |                                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     |  | Real (f7.6)   | 0.0 .. 1.0   |                                  |
| TTC | <i>Tower Type Category</i>   |               |              |                                  |
|     | Appearance or configuration of the feature.  |               |              |                                  |
|     | TTC    0      Unknown  |               |              |                                  |
|     | TTC    1      Bridge   |               |              |                                  |
|     | TTC    2      Observation/Lookout  |               |              |                                  |
|     | TTC    3      Other  |               |              |                                  |
|     | TTC    4      Undefined  |               |              |                                  |
|     | TTC    5      Light tower  |               |              |                                  |
|     | TTC    6      Water tower  |               |              |                                  |
|     | TTC    7      Radio tower  |               |              |                                  |
|     | TTC    8      Cooling tower  |               |              |                                  |
|     | TTC    9      Radar tower  |               |              |                                  |
|     | TTC    10      Lookout tower   |               |              |                                  |
|     | TTC    11      Television tower  |               |              |                                  |
|     | TTC    12      Fire  |               |              |                                  |
|     | TTC    13      Mooring Tower, articulated loading platform , single anchor leg         |               |              |                                  |
|     | TTC    14      Powerline   |               |              |                                  |
|     | TTC    15      Loran   |               |              |                                  |
|     | TTC    16      Control   |               |              |                                  |
|     | TTC    17      Micro Wave  |               |              |                                  |
| TTP | <i>Texture Type</i>  |               |              |                                  |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC). |               |              |                                  |
|     | TTP    1      RGB  |               |              |                                  |
|     | TTP    2      GRAY   |               |              |                                  |
|     | TTP    3      MULTI  |               |              |                                  |
|     | TTP    4      SMFD   |               |              |                                  |
| TUC | Transportation Use Category  |               |              |                                  |
| TXT | <i>Text Attribute</i>  |               |              |                                  |
|     | Narrative or other description.  |               |              |                                  |
|     | TXT    0      Actual Value   |               |              |                                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u> | <u>Increment</u> <u>Max Char</u> |
|     |  | Text String   | Lexical      | 256                              |



|        |  |
|--------|--|
| USE    | Usage  |
|        | Use (identifies the primary user, function, or controlling authority). |
| USE 0  | Unknown  |
| USE 4  | National   |
| USE 5  | State  |
| USE 6  | Private  |
| USE 7  | Tribal   |
| USE 8  | Military   |
| USE 10 | Other  |
| USE 11 | Motel/Hotel  |
| USE 12 | Apartment  |
| USE 13 | Open   |
| USE 14 | VALUE INTENTIONALLY LEFT BLANK   |
| USE 15 | VALUE INTENTIONALLY LEFT BLANK   |
| USE 16 | City   |
| USE 17 | Advertising Billboard  |
| USE 18 | Scoreboard   |
| USE 19 | Highway Sign   |
| USE 20 | Closed   |
| USE 21 | Restricted   |
| USE 22 | Joint Military/Civilian  |
| USE 23 | International  |
| USE 24 | Unidentified Aircraft Landing Area                                     |
| USE 25 | Federal  |
| USE 26 | Primary/1st Order  |
| USE 30 | Secondary/2nd Order  |
| USE 31 | Tertiary/3rd Order   |
| USE 32 | Insular  |
| USE 33 | Provincial   |
| USE 37 | Interstate   |
| USE 41 | Industrial   |
| USE 42 | Commercial   |
| USE 43 | Institutional  |
| USE 44 | Residential  |
| USE 45 | Agricultural   |
| USE 48 | Decoy  |
| USE 49 | Civilian/Public  |
| USE 50 | Limited  |
| USE 51 | Telegraph  |
| USE 52 | Telephone  |
| USE 53 | Power  |
| USE 57 | Marine   |
| USE 60 | Avalanche  |
| USE 61 | Refugee  |
| USE 62 | Prisoner   |
| USE 68 | Animal sanctuary   |
| USE 69 | Levee/Dike   |
| USE 70 | Reserve/Reservation  |
| USE 73 | Terminus/Terminal  |
| USE 74 | Low Altitude enroute   |
| USE 75 | High Altitude Enroute  |
| USE 76 | Low and High Altitude Enroute  |
| USE 77 | Short Take-off Landing Approach  |

|     |     |   |
|-----|-----|---|
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

**WID**      Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|        |               |              |           |           |
|--------|---------------|--------------|-----------|-----------|
| WID    | 0             | Actual Value |           |           |
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

**ZV2**      Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|        |               |                |           |           |
|--------|---------------|----------------|-----------|-----------|
| ZV2    | 0             | Actual Value   |           |           |
| Units  | Format        | Range          | Increment | Max Chars |
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

#### Population Void Collection Area Feature Class

**ID**

**F-CODE/DESCRIPTION**

ZD020 Void Collection Area

**VCA**

Void Collection Attribute

Reason data is not collected.

|     |     |  |
|-----|-----|--|
| VCA | 0   | Unknown                                      |
| VCA | 1   | Data Not Requested By User                   |
| VCA | 2   | Area Too Rough to Collect                    |
| VCA | 3   | No Available Imagery                         |
| VCA | 4   | Different Height Threshold Within Data Block |
| VCA | 5   | Low Data Collection Criteria                 |
| VCA | 6   | No Available Map Source                      |
| VCA | 7   | No Suitable Imagery                          |
| VCA | 8   | Data Not Required                            |
| VCA | 999 | Other  |

## Appendix J. Transportation Coverage

### Railroad Feature Class

ID

#### F-CODE/DESCRIPTION

AN010 US Railroad  
 AN050 US Railroad Siding/Railroad Spur  
 AN075 US Railroad Turntable  
 AN060 Railroad Yard/Marshalling Yard

ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC

#### Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

CCC

#### Color Code Category

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |
| CCC | 47 | Magenta                |
| CCC | 48 | Amber                  |
| CCC | 49 | Buff                   |
| CCC | 51 | Bluegreen              |
| CCC | 52 | Bright Blue            |
| CCC | 53 | Aqua                   |
| CCC | 55 | Bright Green           |
| CCC | 58 | Bright Yellow          |
| CCC | 61 | Bright Red             |
| CCC | 63 | Cyan                   |
| CCC | 64 | Purple                 |
| CCC | 69 | Pink                   |

|     |   |               |  |
|-----|---|---------------|--|
|     | CCC   | 70            | Lavender                                       |
|     | CCC   | 999           | Other  |
| CIC | Color Intensity Category<br>Identifies the intensity of color.  |               |  |
|     | CIC   | 0             | Unknown  |
|     | CIC   | 1             | Dark   |
|     | CIC   | 2             | Light  |
|     | CIC   | 999           | Other  |
| CTL | Cumulative Track Length<br>Total cumulative length of track contained within confines of the feature, exclusive of the branch or main trunk lines running into and/or out of the feature.         |               |  |
|     | CTL   | 0             | Actual Value                                   |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> <u>Increment</u> <u>Max Chars</u> |
|     | Meters  | Short Integer | 0±32,767    1 M                                |
| DFR | Diffuse Reflectance<br>Radar backscatter coefficient, expressed as a ratio  |               |  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> <u>Increment</u> <u>Max Char</u>  |
|     |   | Real(f7.6)    | 0.0 .. 1.0                                     |
| DY1 | Directivity<br>Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).   |               |  |
|     | DY1   | 0             | Unknown  |
|     | DY1   | 1             | Uni  |
|     | DY1   | 2             | Bi   |
|     | DY1   | 3             | Omni   |
|     | DY1   | 999           | Other  |
| DY2 | Directivity (IR)<br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |               |  |
|     | DY2   | 0             | Unknown  |
|     | DY2   | 1             | Uni  |
|     | DY2   | 2             | Bi   |
|     | DY2   | 3             | Omni   |
|     | DY2   | 999           | Other  |
| DY3 | Directivity (Radar)<br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).   |               |  |
|     | DY3   | 0             | Unknown  |
|     | DY3   | 1             | Uni  |
|     | DY3   | 2             | Bi   |
|     | DY3   | 3             | Omni   |
|     | DY3   | 999           | Other  |
| EMY | Emissivity<br>Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature. |               |  |



| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

Existence Category

|     |    |  |
|-----|----|--|
| EXS | 1  | Definite                                 |
| EXS | 2  | Doubtful                                 |
| EXS | 3  | Reported                                 |
| EXS | 4  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 5  | Under Construction                       |
| EXS | 6  | Abandoned/Disused                        |
| EXS | 7  | Destroyed                                |
| EXS | 8  | Dismantled                               |
| EXS | 10 | Proposed                                 |
| EXS | 11 | Temporary                                |
| EXS | 12 | Alternate                                |
| EXS | 13 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 16 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 17 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 18 | Permanent                                |
| EXS | 19 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 20 | Corresponds to Recommended Track         |
| EXS | 21 | Does Not Correspond to Recommended Track |
| EXS | 22 | One-Way                                  |
| EXS | 23 | Two-way                                  |
| EXS | 25 | Not Maintained                           |
| EXS | 26 | Maintained                               |
| EXS | 27 | Closed/Locked                            |
| EXS | 28 | Operational                              |
| EXS | 29 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | Not Isolated                             |
| EXS | 31 | Isolated                                 |
| EXS | 33 | Ruined                                   |
| EXS | 34 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 35 | Other                                    |
| EXS | 42 | Continuous operation                     |
| EXS | 43 | Intermittent operation                   |
| EXS | 44 | Approximate/About                        |
| EXS | 48 | Controlled                               |
| EXS | 49 | Non-Controlled                           |
| EXS | 53 | Incomplete                               |
| EXS | 54 | Antique/Ancient                          |
| EXS | 55 | Unexamined/Unsurveyed                    |
| EXS | 56 | Unattended/Unwatched                     |
| EXS | 59 | Not Usable                               |
| EXS | 61 | Not Isolated                             |
| EXS | 62 | Partially Destroyed                      |
| EXS | 65 | Inactive                                 |

EXS 998 Not Applicable  
EXS 999 Other

FCO Feature Configuration  
Configuration of feature.  
FCO 0 Unknown  
FCO 1 Dispersed  
FCO 2 Multiple  
FCO 3 Single  
FCO 4 Inclined  
FCO 5 Divided same widths  
FCO 6 Divided different widths  
FCO 7 Non-divided  
FCO 8 Poorly defined  
FCO 9 Well-defined  
FCO 11 Double  
FCO 12 Justaxposition  
FCO 999 Other

FOT Feature Onset  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

GAW Gauge Width  
The width of a single pair of rails, measured along the shortest distance from inside rail to inside rail.  
GAW 0 Actual Width  

| Units      | Format        | Range    | Increment | Max Chars |
|------------|---------------|----------|-----------|-----------|
| Centimeter | Short Integer | 0±32,767 | 1 CM      |           |

IMC Internal Material Category  
Category code for material internal to an object.  

| Units   | Format | Range      | Increment | Max Char |
|---------|--------|------------|-----------|----------|
| Integer |        | 1 .. 32767 |           |          |

LEN Length/Diameter of Point Feature  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0 Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

LLE Low Level Effects  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

LLL Long Lineal  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features



LLL T  
LLL F

LN1

*Layer Number*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units   | Format | Range          | Increment | Max Char |
|---------|--------|----------------|-----------|----------|
| Integer |        | 0.. 2147483647 |           |          |

LN2

*Layer Number (IR)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units   | Format | Range          | Increment | Max Char |
|---------|--------|----------------|-----------|----------|
| Integer |        | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units   | Format | Range          | Increment | Max Char |
|---------|--------|----------------|-----------|----------|
| Integer |        | 0.. 2147483647 |           |          |

LOC

*Location Category*

Status of feature relative to surrounding area or water.

|     |    |   |
|-----|----|---|
| LOC | 0  | Unknown                                       |
| LOC | 1  | Above Surface/Does not Cover (Height Known)   |
| LOC | 2  | Awash at Chart Datum                          |
| LOC | 3  | Dries/Covers (Height Unknown)                 |
| LOC | 4  | Below Surface /Submerged/Underground          |
| LOC | 5  | Covered < 20 Meters                           |
| LOC | 6  | Covered ≥ 20 Meters but < 30 Meters           |
| LOC | 7  | Covered ≥30 Meters                            |
| LOC | 8  | On Ground Surface                             |
| LOC | 9  | Depth Known                                   |
| LOC | 10 | Depth Known ( Cleared by Drag Wire)           |
| LOC | 11 | Depth Unknown But Safe to Depth Shown         |
| LOC | 12 | VALUE INTENTIONALLY LEFT BLANK                |
| LOC | 13 | Hull Showing                                  |
| LOC | 14 | Masts Showing                                 |
| LOC | 15 | On Water Surface/Floating                     |
| LOC | 16 | Partially Submerged                           |
| LOC | 17 | Sunken/on sea bottom                          |
| LOC | 19 | Above Surface/Does not Cover (Height Unknown) |
| LOC | 20 | Funnel Showing                                |
| LOC | 21 | Superstructure showing                        |
| LOC | 22 | Off Shore                                     |
| LOC | 23 | Below sea bottom                              |
| LOC | 24 | Suspended or elevated above sea bottom        |

|     |     |   |
|-----|-----|---|
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

LOG Length of Gradient  
The length of a segment having a gradient <sup>3</sup> 7 percent for a Road (AP030) or <sup>£</sup> 3 percent for a Railroad Track (AN010).

|        |               |              |           |           |  |
|--------|---------------|--------------|-----------|-----------|--|
| LOG    | 0             | Actual Value |           |           |  |
| Units  | Format        | Range        | Increment | Max Chars |  |
| Meters | Short Integer | 0±32,767     | 1 M       |           |  |

LTN Track/Lane Number  
The number of track(s) or lanes of the feature, including both directions.

|              |               |              |              |           |  |
|--------------|---------------|--------------|--------------|-----------|--|
| LTN          | 0             | Actual Value |              |           |  |
| Units        | Format        | Range        | Increment    | Max Chars |  |
| Lanes/tracks | Short Integer | 0±32,767     | 1 LANE/TRACK |           |  |

NAM Name  
Any Identifier or code.

|       |             |              |           |           |  |
|-------|-------------|--------------|-----------|-----------|--|
| NAM   | 0           | Actual Value |           |           |  |
| Units | Format      | Range        | Increment | Max Chars |  |
|       | Text String | Lexical      |           | 80        |  |

OIT *Object Illumination Type*  
Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

RFL *Reflectance*  
Ratio of radiant energy reflected by and object to the amount incident upon it.

|       |             |            |           |          |
|-------|-------------|------------|-----------|----------|
| Units | Format      | Range      | Increment | Max Char |
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

RGC Railroad Gauge Category  
The type of gauge used.

|     |   |                   |
|-----|---|-------------------|
| RGC | 1 | Broad             |
| RGC | 2 | Narrow            |
| RGC | 3 | Normal (Standard) |
| RGC | 4 | Any               |

|                           |   |                            |  |
|---------------------------|---|----------------------------|--|
| RRA                       | Railroad Power Source   |                            |  |
|                           | Source of electrical power for railroad.  |                            |  |
|                           | RRA   | 0                          | Unknown  |
|                           | RRA   | 1                          | Electrified Track                                |
|                           | RRA   | 3                          | Overhead Electrified                             |
|                           | RRA   | 4                          | Non-electrified                                  |
| RRA                       | 999   | Other                      |  |
| RRC                       | Railroad Categories   |                            |  |
|                           | The type of railroad system used to support various transportation uses.  |                            |  |
|                           | RRC   | 0                          | Unknown  |
|                           | RRC   | 2                          | Car-Line   |
|                           | RRC   | 3                          | Monorail   |
|                           | RRC   | 6                          | Subway   |
|                           | RRC   | 8                          | Logging  |
|                           | RRC   | 10                         | Miniature  |
|                           | RRC   | 11                         | Rapid Transit Route- Rail                        |
|                           | RRC   | 13                         | Marine Railroad                                  |
|                           | RRC   | 14                         | Tramway  |
|                           | RRC   | 15                         | Inclined Railway                                 |
|                           | RRC   | 16                         | Main Line  |
|                           | RRC   | 17                         | Branch Line                                      |
|                           | RRC   | 21                         | Railroad in Road                                 |
|                           | RRC   | 998                        | Not Applicable                                   |
|                           | RRC   | 999                        | Other  |
|                           | RSA   | Rail Siding/Spur Attribute |  |
| Type of connecting track. |   |                            |  |
| RSA                       |   | 1                          | Spur   |
| RSA                       |   | 2                          | Siding   |
| RSA                       | 3   | Passing                    |  |
| SER                       | Self Emitter  |                            |  |
|                           | Indicates that an object has self heating characteristics   |                            |  |
|                           | SER   | T                          |  |
|                           | SER   | F                          |  |
| SGC                       | Gradient/Slope  |                            |  |
|                           | Percentage of slope. (i.e. The change in height divided by the horizontal distance over which the change takes place, times one hundred ((h2-h1)/d) 100.) |                            |  |
|                           | SGC   | 0                          | Actual Value                                     |
|                           | Units   | Format                     | Range  |
|                           | Percent   | Short Integer              | 0-100  |
|                           |   |                            | 1 %  |
| SMS                       | Surface Material Subtype  |                            |  |
|                           | Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.                   |                            |  |
|                           | SMS   | 0                          | Unknown  |
|                           | SMS   | 1                          | GW Well graded gravels or gravel-sand mixtures   |
|                           | SMS   | 2                          | GP Poorly graded gravels or gravel-sand mixtures |
|                           | SMS   | 3                          | GM Silty gravels, gravel-sand-silt mixtures      |
|                           | SMS   | 4                          | GC Clayey gravels, gravel-sand-clay mixture      |
|                           |   |                            |  |
|                           |   |                            |  |
|                           |   |                            |  |

|     |    |   |
|-----|----|---|
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynnch   |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |
| SMS | 57 | Lumber  |
| SMS | 58 | Macadam   |
| SMS | 59 | Madrepores  |
| SMS | 60 | Manganese   |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

SS1

*Sensors Supported*

SS2

SS3 Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
 SS1(SS2,SS3) T  
 SS1(SS2,SS3) F

TMR *Texture Map Reflectance*  
 Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

TRL *Translucency*  
 The degree to which a surface is transparent.

| Type        | Format | Range        | Increment | Max Char |
|-------------|--------|--------------|-----------|----------|
| Real (6 sd) |        | 0.0 .. 100.0 |           |          |

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

TRV *Transmissivity*  
 Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

TTP *Texture Type*  
 Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

TXT *Text Attribute*  
 Narrative or other description.

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

UBC *Underbridge Clearance Category*  
 Clearance below bridge, measured from the lowest surface level to the base of the lower of either a cross beam or the lowest bridge deck.

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

USE *Usage*  
 Use (identifies the primary user, function, or controlling authority).

|     |    |             |
|-----|----|-------------|
| USE | 0  | Unknown     |
| USE | 4  | National    |
| USE | 5  | State       |
| USE | 6  | Private     |
| USE | 7  | Tribal      |
| USE | 8  | Military    |
| USE | 10 | Other       |
| USE | 11 | Motel/Hotel |
| USE | 12 | Apartment   |

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |
| USE | 85 | Initial Approach Fix               |
| USE | 86 | Final Approach Fix                 |
| USE | 87 | Visual Descent Point               |
| USE | 88 | Missed Approach Point              |
| USE | 89 | Radar                              |

|     |     |   |
|-----|-----|---|
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |



USE 999 Other

VRR Vertical Reference Category  
Relative location referenced to sounding datum, unless otherwise indicated.

|     |   |  |
|-----|---|--|
| VRR | 0 | Unknown                                      |
| VRR | 1 | Above Surface/Does not cover (At High Water) |
| VRR | 2 | Awash at Sounding Datum                      |
| VRR | 4 | Below Surface/Submerged                      |
| VRR | 8 | Covers and Uncovers                          |
| VRR | 9 | Not Applicable                               |

WID Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|     |   |              |
|-----|---|--------------|
| WID | 0 | Actual Value |
|-----|---|--------------|

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

#### Road Feature Class

ID

F-CODE/DESCRIPTION  
AP010 Cart Track  
AP020 US Interchange  
AP030 Road  
AP050 US Trail  
AP060 Drove  
AQ030 US Boardwalk

ABS Absorptivity  
Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC Accuracy Category  
Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

AOO Angle of Orientation  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|     |   |              |
|-----|---|--------------|
| AOO | 0 | Actual Value |
|-----|---|--------------|

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

|     |                     |                        |
|-----|---------------------|------------------------|
| CCC | Color Code Category |                        |
| CCC | 0                   | Unknown/Not applicable |
| CCC | 1                   | Black                  |
| CCC | 2                   | Blue                   |
| CCC | 3                   | Brown                  |
| CCC | 4                   | Gray                   |
| CCC | 5                   | Green                  |
| CCC | 7                   | Chocolate              |
| CCC | 9                   | Orange                 |
| CCC | 12                  | Red                    |
| CCC | 14                  | Violet                 |
| CCC | 15                  | White                  |
| CCC | 19                  | Yellow                 |
| CCC | 47                  | Magenta                |
| CCC | 48                  | Amber                  |
| CCC | 49                  | Buff                   |
| CCC | 51                  | Bluegreen              |
| CCC | 52                  | Bright Blue            |
| CCC | 53                  | Aqua                   |
| CCC | 55                  | Bright Green           |
| CCC | 58                  | Bright Yellow          |
| CCC | 61                  | Bright Red             |
| CCC | 63                  | Cyan                   |
| CCC | 64                  | Purple                 |
| CCC | 69                  | Pink                   |
| CCC | 70                  | Lavender               |
| CCC | 999                 | Other                  |

|     |                                    |         |
|-----|------------------------------------|---------|
| CIC | Color Intensity Category           |         |
|     | Identifies the intensity of color. |         |
| CIC | 0                                  | Unknown |
| CIC | 1                                  | Dark    |
| CIC | 2                                  | Light   |
| CIC | 999                                | Other   |

|     |   |               |              |                  |                 |
|-----|---|---------------|--------------|------------------|-----------------|
| DFR | Diffuse Reflectance                                 |               |              |                  |                 |
|     | Radar backscatter coefficient, expressed as a ratio |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     |   | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

|     |  |         |
|-----|--|---------|
| DY1 | Directivity  |         |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (visual response). |         |
| DY1 | 0  | Unknown |
| DY1 | 1  | Uni     |
| DY1 | 2  | Bi      |
| DY1 | 3  | Omni    |
| DY1 | 999  | Other   |

|     |  |         |
|-----|--|---------|
| DY2 | Directivity (IR)   |         |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response). |         |
| DY2 | 0  | Unknown |
| DY2 | 1  | Uni     |

|     |     |       |
|-----|-----|-------|
| DY2 | 2   | Bi    |
| DY2 | 3   | Omni  |
| DY2 | 999 | Other |

DY3

*Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

|     |    |  |
|-----|----|--|
| EXS | 1  | Definite                                 |
| EXS | 2  | Doubtful                                 |
| EXS | 3  | Reported                                 |
| EXS | 4  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 5  | Under Construction                       |
| EXS | 6  | Abandoned/Disused                        |
| EXS | 7  | Destroyed                                |
| EXS | 8  | Dismantled                               |
| EXS | 10 | Proposed                                 |
| EXS | 11 | Temporary                                |
| EXS | 12 | Alternate                                |
| EXS | 13 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 16 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 17 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 18 | Permanent                                |
| EXS | 19 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 20 | Corresponds to Recommended Track         |
| EXS | 21 | Does Not Correspond to Recommended Track |
| EXS | 22 | One-Way                                  |
| EXS | 23 | Two-way                                  |
| EXS | 25 | Not Maintained                           |
| EXS | 26 | Maintained                               |
| EXS | 27 | Closed/Locked                            |
| EXS | 28 | Operational                              |
| EXS | 29 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | Not Isolated                             |

|     |     |                                |
|-----|-----|--------------------------------|
| EXS | 31  | Isolated                       |
| EXS | 33  | Ruined                         |
| EXS | 34  | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 35  | Other                          |
| EXS | 42  | Continuous operation           |
| EXS | 43  | Intermittent operation         |
| EXS | 44  | Approximate/About              |
| EXS | 45  | Natural                        |
| EXS | 46  | Man-made                       |
| EXS | 48  | Controlled                     |
| EXS | 49  | Non-Controlled                 |
| EXS | 50  | Non-Tidal                      |
| EXS | 51  | Tidal/Tidal Fluctuation        |
| EXS | 53  | Incomplete                     |
| EXS | 54  | Antique/Ancient                |
| EXS | 55  | Unexamined/Unsurveyed          |
| EXS | 56  | Unattended/Unwatched           |
| EXS | 59  | Not Usable                     |
| EXS | 61  | Not Isolated                   |
| EXS | 62  | Partially Destroyed            |
| EXS | 65  | Inactive                       |
| EXS | 998 | Not Applicable                 |
| EXS | 999 | Other                          |

#### FCO

##### Feature Configuration

Configuration of feature.

|     |     |                          |
|-----|-----|--------------------------|
| FCO | 0   | Unknown                  |
| FCO | 1   | Dispersed                |
| FCO | 2   | Multiple                 |
| FCO | 3   | Single                   |
| FCO | 4   | Inclined                 |
| FCO | 5   | Divided same widths      |
| FCO | 6   | Divided different widths |
| FCO | 7   | Non-divided              |
| FCO | 8   | Poorly defined           |
| FCO | 9   | Well-defined             |
| FCO | 11  | Double                   |
| FCO | 12  | Justaxposition           |
| FCO | 999 | Other                    |

#### FOT

##### Feature Onset

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

#### IMC

##### Internal Material Category

Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

#### LAB

##### Feature Label

Label applied to the feature.

|     |   |              |
|-----|---|--------------|
| LAB | 0 | Actual Value |
|-----|---|--------------|

|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|-----|--|---------------|----------------|------------------|------------------|
|     |  | Text String   | Lexical        |                  | 80 Characters    |
| LC1 | Load Class Type 1<br>Military load classification (weight bearing capacity) Type 1.<br>LC1 0 Weight bearing capacity for one-way traffic of wheeled vehicles (from STANAG 2253).   |               |                |                  |                  |
| LC2 | Load Class Type 2<br>Military load classification (weight bearing capacity) Type 2.<br>LC2 0 Weight bearing capacity for two-way traffic of wheeled vehicles (from STANAG 2253).   |               |                |                  |                  |
| LC3 | Load Class Type 3<br>Military load classification (weight bearing capacity) Type 3.<br>LC3 0 Weight bearing capacity for one-way traffic of tracked vehicles (from STANAG 2253).   |               |                |                  |                  |
| LC4 | Load Class Type 4<br>Military load classification (weight bearing capacity) Type 4.<br>LC4 0 Weight bearing capacity for two-way traffic of tracked vehicles (from STANAG 2253).   |               |                |                  |                  |
| LEN | Length/Diameter of Point Feature<br>A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.<br>LEN 0 Actual Value |               |                |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters   | Short Integer | 0±32,767       | 1 M              |                  |
| LLE | <i>Low Level Effects</i><br>Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.<br>LLE T<br>LLE F  |               |                |                  |                  |
| LLL | <i>Long Lineal</i><br>Reference to a point feature which could potentially look like a long linear feature by radar.<br>Applies to point features<br>LLL T<br>LLL F  |               |                |                  |                  |
| LN1 | <i>Layer Number</i><br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).                |               |                |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Integer       | 0.. 2147483647 |                  |                  |
| LN2 | <i>Layer Number (IR)</i><br>A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be   |               |                |                  |                  |

rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LOC

Location Category

Status of feature relative to surrounding area or water.

|     |     |   |
|-----|-----|---|
| LOC | 0   | Unknown   |
| LOC | 1   | Above Surface/Does not Cover (Height Known)       |
| LOC | 2   | Awash at Chart Datum                              |
| LOC | 3   | Dries/Covers (Height Unknown)                     |
| LOC | 4   | Below Surface /Submerged/Underground              |
| LOC | 5   | Covered < 20 Meters                               |
| LOC | 6   | Covered ≥ 20 Meters but < 30 Meters               |
| LOC | 7   | Covered ≥30 Meters                                |
| LOC | 8   | On Ground Surface                                 |
| LOC | 9   | Depth Known                                       |
| LOC | 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11  | Depth Unknown But Safe to Depth Shown             |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13  | Hull Showing                                      |
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |

|     |  |                |                |                  |                  |  |
|-----|--|----------------|----------------|------------------|------------------|--|
| LOC | 999  | Other          |                |                  |                  |  |
| LOG | Length of Gradient<br>The length of a segment having a gradient <sup>3</sup> 7 percent for a Road (AP030) or <sup>£</sup> 3 percent for a Railroad Track (AN010).                          |                |                |                  |                  |  |
|     | LOG  | 0              | Actual Value   |                  |                  |  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
|     | Meters   | Short Integer  | 0±32,767       | 1 M              |                  |  |
| LTN | Track/Lane Number<br>The number of track(s) or lanes of the feature, including both directions.  |                |                |                  |                  |  |
|     | LTN  | 0              | Actual Value   |                  |                  |  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
|     | Lanes/tracks   | Short Integer  | 0±32,767       | 1 LANE/TRACK     |                  |  |
| MED | Median Category<br>Presence of a divider between multiple lanes/rails.   |                |                |                  |                  |  |
|     | MED  | 1              | With Median    |                  |                  |  |
|     | MED  | 2              | Without Median |                  |                  |  |
|     | MED  | 998            | Not Applicable |                  |                  |  |
|     | MED  | 999            | Other          |                  |                  |  |
| OIT | <i>Object Illumination Type</i><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features. |                |                |                  |                  |  |
|     | OIT  | 1              | SELF           |                  |                  |  |
|     | OIT  | 2              | SUN            |                  |                  |  |
|     | OIT  | 3              | NOSUN          |                  |                  |  |
| NA3 | Classification. Name<br>Fundamentally a grammalogue, index number, order or classification number for a feature.   |                |                |                  |                  |  |
|     | NA3  | 0              | Actual Value   |                  |                  |  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
|     |  | Text String    | Lexical        |                  | 80               |  |
| NAM | Name<br>Any Identifier or code.  |                |                |                  |                  |  |
|     | NAM  | 0              | Actual Value   |                  |                  |  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
|     |  | Text String    | Lexical        |                  | 80               |  |
| OHC | Overhead Clearance Category<br>The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)   |                |                |                  |                  |  |
|     | OHC  | 0              | Actual Value   |                  |                  |  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
|     | Meters   | Floating Point |                | 0.1 M            |                  |  |
| OIT | <i>Object Illumination Type</i><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features. |                |                |                  |                  |  |

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

**RFL**      *Reflectance*  
Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**RIT**      Road Interchange Type  
The unique interchange design.

|     |     |                                   |
|-----|-----|-----------------------------------|
| RIT | 0   | Unknown                           |
| RIT | 1   | Cloverleaf                        |
| RIT | 2   | Diamond                           |
| RIT | 3   | Fork                              |
| RIT | 4   | Rotary /Traffic Circle/Roundabout |
| RIT | 5   | Staggered Ramps                   |
| RIT | 6   | Standard Ramps                    |
| RIT | 7   | Symmetrical Ramps                 |
| RIT | 8   | Trumpet                           |
| RIT | 9   | Turban                            |
| RIT | 10  | Wye                               |
| RIT | 999 | Other                             |

**RST**      Road/Runway Surface Type  
The physical surface composition of a road.

|     |     |                  |
|-----|-----|------------------|
| RST | 0   | Unknown          |
| RST | 1   | Hard /Paved      |
| RST | 2   | Loose /Unpaved   |
| RST | 3   | Loose /Light     |
| RST | 4   | Corduroy         |
| RST | 5   | Grass/Sod (Soft) |
| RST | 6   | Natural          |
| RST | 7   | Permanent        |
| RST | 8   | Temporary        |
| RST | 998 | Not Applicable   |
| RST | 999 | Other            |

**RTC**      Road Type Category  
NATO road type classification (see STANAG 3675).

|     |   |                 |
|-----|---|-----------------|
| RTC | 0 | Unknown         |
| RTC | 1 | NATO Category X |
| RTC | 2 | NATO Category Y |
| RTC | 3 | NATO Category Z |

**RTN**      Route Number  
Official route number (I-95, M-2, A-1, etc.) assigned to the feature.

| RTN         | 0          | Actual Value |           |           |
|-------------|------------|--------------|-----------|-----------|
| Units       | Format     | Range        | Increment | Max Chars |
| Text String | ASCII Text |              |           | 24        |

**RTT**      Route Intended Use  
Intended use of the route.

|     |   |         |
|-----|---|---------|
| RTT | 0 | Unknown |
|-----|---|---------|



|     |     |  |
|-----|-----|--|
| RTT | 1   | Recommended Track  |
| RTT | 5   | Transit Route  |
| RTT | 6   | Radar Guided Track                                       |
| RTT | 7   | Measured Distance Line                                   |
| RTT | 9   | Traffic Lane (TSS)                                       |
| RTT | 10  | Roundabout Lane (TSS)                                    |
| RTT | 11  | Two-way Route  |
| RTT | 12  | Recommended Track (TSS)                                  |
| RTT | 13  | Recommended direction of traffic flow                    |
| RTT | 14  | Primary Route  |
| RTT | 15  | Secondary Route  |
| RTT | 16  | Limited Access Route (e.g. Motorway/Autobahn/Interstate) |
| RTT | 96  | Recommended Traffic Lane Part                            |
| RTT | 97  | Centerline   |
| RTT | 999 | Other  |

*SER Self Emitter*  
Indicates that an object has self heating characteristics  
SER T  
SER F

*SGC Gradient/Slope*  
Percentage of slope. (i.e. The change in height divided by the horizontal distance over which the change takes place, times one hundred ((h2-h1)/d) 100.)

|         |               |              |           |           |
|---------|---------------|--------------|-----------|-----------|
| SGC     | 0             | Actual Value |           |           |
| Units   | Format        | Range        | Increment | Max Chars |
| Percent | Short Integer | 0-100        | 1 %       |           |

*SMS Surface Material Subtype*  
Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 22 | Basalt                   |
| SMS | 23 | Bedrock                  |
| SMS | 24 | Boulders                 |
| SMS | 25 | Calcareous               |
| SMS | 26 | Chalk                    |
| SMS | 27 | Cinders                  |
| SMS | 28 | Cirripedia               |
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flysch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 79  | Salt              |
| SMS | 80  | Sand              |
| SMS | 81  | Sandstone         |
| SMS | 82  | Schist            |
| SMS | 83  | Spoils/Tailings   |
| SMS | 84  | Scoria            |
| SMS | 85  | Sewage            |
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

*TRA*      Traversablity

*TRL*      *Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real (f7.3)   | 0.0 .. 100.0 |                  |                 |

*TRV*      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

*TTP*      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

*TUC*      *Transportation Use Category*  
Identifies the primary user, function, or authority of the transportation system.

|     |     |                                |
|-----|-----|--------------------------------|
| TUC | 0   | Unknown                        |
| TUC | 1   | Both Road and Railroad         |
| TUC | 2   | Highway                        |
| TUC | 3   | Railroad                       |
| TUC | 4   | Road                           |
| TUC | 6   | Street                         |
| TUC | 7   | Through Routes                 |
| TUC | 8   | Air Traffic Control            |
| TUC | 12  | Marine                         |
| TUC | 13  | Air                            |
| TUC | 14  | Bus                            |
| TUC | 17  | Pedestrian                     |
| TUC | 18  | Pipeline                       |
| TUC | 19  | Animal                         |
| TUC | 20  | Aircraft                       |
| TUC | 21  | Ship                           |
| TUC | 22  | Automotive                     |
| TUC | 23  | Boat                           |
| TUC | 24  | Bulk Motor Boat/Barge          |
| TUC | 25  | VALUE INTENTIONALLY LEFT BLANK |
| TUC | 26  | Passenger                      |
| TUC | 27  | Chair lift                     |
| TUC | 28  | Ski tow                        |
| TUC | 29  | Sleigh tow                     |
| TUC | 30  | Cart tow                       |
| TUC | 31  | Motor Cycle                    |
| TUC | 36  | Slip Road/Access Road          |
| TUC | 37  | Portage                        |
| TUC | 38  | Canal                          |
| TUC | 39  | Caravan Route                  |
| TUC | 40  | Subway                         |
| TUC | 999 | Other                          |

*TXT*      *Text Attribute*  
Narrative or other description.

|     |   |              |
|-----|---|--------------|
| TXT | 0 | Actual Value |
|-----|---|--------------|

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Text String   | Lexical      |                  | 256             |

## USE

### Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |

|     |     |   |
|-----|-----|---|
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

WD1 Minimum Traveled Way Width  
Minimum width of the traveled way, excluding hard pavements and shoulders (in decimeters).

|            |   |               |          |           |           |
|------------|---|---------------|----------|-----------|-----------|
| WD1        | 0 | Actual Value  |          |           |           |
| Units      |   | Format        | Range    | Increment | Max Chars |
| Decimeters |   | Short Integer | 0±32,767 | 1 DM      |           |

WD2 Total Usable Width  
Total usable width including pavements and hard shoulders (in decimeters).

|            |   |               |          |           |           |
|------------|---|---------------|----------|-----------|-----------|
| WD2        | 0 | Actual Value  |          |           |           |
| Units      |   | Format        | Range    | Increment | Max Chars |
| Decimeters |   | Short Integer | 0±32,767 | 1 DM      |           |

WID Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|        |   |               |          |           |           |
|--------|---|---------------|----------|-----------|-----------|
| WID    | 0 | Actual Value  |          |           |           |
| Units  |   | Format        | Range    | Increment | Max Chars |
| Meters |   | Short Integer | 0±32,767 | 1 M       |           |

WTC Weather Type Category  
Weather conditions under which a feature is usable.

|     |     |  |
|-----|-----|--|
| WTC | 0   | Unknown                                      |
| WTC | 1   | All Weather                                  |
| WTC | 2   | Fair /Dry Weather                            |
| WTC | 3   | Winter Only                                  |
| WTC | 4   | All Weather (Limited Traffic Due to Weather) |
| WTC | 998 | Not Applicable                               |
| WTC | 999 | Other  |

ZV2 Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|        |   |               |                |           |           |
|--------|---|---------------|----------------|-----------|-----------|
| ZV2    | 0 | Actual Value  |                |           |           |
| Units  |   | Format        | Range          | Increment | Max Chars |
| Meters |   | Short Integer | -400 to 30,000 | 1 M       |           |

## Obstacles to Transportation Feature Class

ID

### F-CODE/DESCRIPTION

AP040 Gate  
AP041 Barrier  
AL070 Fence  
AL260 Wall  
AQ118 Sharp Curve(s)  
AQ120 Steep Grade

ABS

### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

AOO

### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| AOO 0   | Actual Value  |       |           |           |
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

ATN

### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|         |          |
|---------|----------|
| ATN 0   | Unknown  |
| ATN 1   | Marked   |
| ATN 2   | Unmarked |
| ATN 3   | Lit      |
| ATN 4   | Unlit    |
| ATN 999 | Other    |

CCC

### Color Code Category

|        |                        |
|--------|------------------------|
| CCC 0  | Unknown/Not applicable |
| CCC 1  | Black                  |
| CCC 2  | Blue                   |
| CCC 3  | Brown                  |
| CCC 4  | Gray                   |
| CCC 5  | Green                  |
| CCC 7  | Chocolate              |
| CCC 9  | Orange                 |
| CCC 12 | Red                    |
| CCC 14 | Violet                 |
| CCC 15 | White                  |
| CCC 19 | Yellow                 |
| CCC 47 | Magenta                |
| CCC 48 | Amber                  |
| CCC 49 | Buff                   |
| CCC 51 | Bluegreen              |
| CCC 52 | Bright Blue            |
| CCC 53 | Aqua                   |



|     |     |               |
|-----|-----|---------------|
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|     |  |         |
|-----|--|---------|
| CIC | Color Intensity Category<br>Identifies the intensity of color. |         |
| CIC | 0  | Unknown |
| CIC | 1  | Dark    |
| CIC | 2  | Light   |
| CIC | 999  | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category<br>A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

|     |  |   |
|-----|--|---|
| DFR | Diffuse Reflectance<br>Radar backscatter coefficient, expressed as a ratio |   |
|     | <u>Units</u>   | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Char</u> |
|     |  | Real(f7.6)      0.0 .. 1.0                                  |

|     |   |         |
|-----|---|---------|
| DY1 | Directivity<br>Indicator of shape of the planar response curve of a feature or model to a sensor (visual response). |         |
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999   | Other   |

|     |  |         |
|-----|--|---------|
| DY2 | Directivity (IR)<br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response). |         |
| DY2 | 0  | Unknown |
| DY2 | 1  | Uni     |
| DY2 | 2  | Bi      |
| DY2 | 3  | Omni    |

DY2 999 Other

*DY3 Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS Existence Category*

|     |    |                                |
|-----|----|--------------------------------|
| EXS | 1  | Definite                       |
| EXS | 2  | Doubtful                       |
| EXS | 3  | Reported                       |
| EXS | 4  | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 5  | Under Construction             |
| EXS | 6  | Abandoned/Disused              |
| EXS | 7  | Destroyed                      |
| EXS | 8  | Dismantled                     |
| EXS | 10 | Proposed                       |
| EXS | 11 | Temporary                      |
| EXS | 12 | Alternate                      |
| EXS | 13 | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 16 | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 17 | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 18 | Permanent                      |
| EXS | 19 | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 25 | Not Maintained                 |
| EXS | 26 | Maintained                     |
| EXS | 27 | Closed/Locked                  |
| EXS | 28 | Operational                    |
| EXS | 29 | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 30 | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 30 | Not Isolated                   |
| EXS | 31 | Isolated                       |
| EXS | 33 | Ruined                         |
| EXS | 34 | VALUE INTENTIONALLY LEFT BLANK |
| EXS | 35 | Other                          |
| EXS | 36 | Commissioned and Operational   |
| EXS | 37 | Commissioned and on Test       |

|     |     |                                     |
|-----|-----|-------------------------------------|
| EXS | 38  | Commissioned and out of service     |
| EXS | 39  | Not commissioned and operational    |
| EXS | 40  | Not commissioned and on test        |
| EXS | 41  | Not commissioned and out of service |
| EXS | 44  | Approximate/About                   |
| EXS | 45  | Natural                             |
| EXS | 46  | Man-made                            |
| EXS | 48  | Controlled                          |
| EXS | 49  | Non-Controlled                      |
| EXS | 53  | Incomplete                          |
| EXS | 54  | Antique/Ancient                     |
| EXS | 55  | Unexamined/Unsurveyed               |
| EXS | 56  | Unattended/Unwatched                |
| EXS | 59  | Not Usable                          |
| EXS | 61  | Not Isolated                        |
| EXS | 62  | Partially Destroyed                 |
| EXS | 65  | Inactive                            |
| EXS | 998 | Not Applicable                      |
| EXS | 999 | Other                               |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*FTI*      *Fence Type Indicator*  
Type of fence.

|     |     |             |
|-----|-----|-------------|
| FTI | 0   | Unknown     |
| FTI | 1   | Metal       |
| FTI | 2   | Wood        |
| FTI | 3   | Stone       |
| FTI | 4   | Rock        |
| FTI | 5   | Barbed Wire |
| FTI | 6   | Chain link  |
| FTI | 999 | Other       |

*GTP*      *Gate type*  
The classification of the type of barrier or gate.

|     |    |                            |
|-----|----|----------------------------|
| GNC | 0  | Undefined                  |
| GNC | 1  | Gate in general            |
| GNC | 2  | Tidal gate (flood barrage) |
| GNC | 3  | Caisson                    |
| GNC | 4  | Lock gate                  |
| GTC | 5  | Tollgate                   |
| GTC | 99 | Other                      |

*HGT*      *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

| HGT    | 0             | Actual Value |           |           |
|--------|---------------|--------------|-----------|-----------|
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

|     |  |               |   |                  |                  |
|-----|--|---------------|---|------------------|------------------|
| IMC | <i>Internal Material Category</i>  |               |   |                  |                  |
|     | Category code for material internal to an object.  |               |   |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Integer       | 1 .. 32767                                  |                  |                  |
| LEN | Length/Diameter of Point Feature   |               |   |                  |                  |
|     | A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.                       |               |   |                  |                  |
|     | LEN  | 0             | Actual Value                                |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters   | Short Integer | 0±32,767                                    | 1 M              |                  |
| LLE | <i>Low Level Effects</i>   |               |   |                  |                  |
|     | Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  |               |   |                  |                  |
|     | LLE T  |               |   |                  |                  |
|     | LLE F  |               |   |                  |                  |
| LLL | <i>Long Lineal</i>   |               |   |                  |                  |
|     | Reference to a point feature which could potentially look like a long linear feature by radar.   |               |   |                  |                  |
|     | Applies to point features  |               |   |                  |                  |
|     | LLL T  |               |   |                  |                  |
|     | LLL F  |               |   |                  |                  |
| LN1 | <i>Layer Number</i>  |               |   |                  |                  |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).   |               |   |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Integer       | 0.. 2147483647                              |                  |                  |
| LN2 | <i>Layer Number (IR)</i>   |               |   |                  |                  |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |   |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Integer       | 0.. 2147483647                              |                  |                  |
| LN3 | <i>Layer Number (Radar)</i>  |               |   |                  |                  |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |   |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>                                | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Integer       | 0.. 2147483647                              |                  |                  |
| LOC | <i>Location Category</i>   |               |   |                  |                  |
|     | Status of feature relative to surrounding area or water.   |               |   |                  |                  |
|     | LOC  | 0             | Unknown                                     |                  |                  |
|     | LOC  | 1             | Above Surface/Does not Cover (Height Known) |                  |                  |

|     |     |   |
|-----|-----|---|
| LOC | 2   | Awash at Chart Datum                              |
| LOC | 3   | Dries/Covers (Height Unknown)                     |
| LOC | 4   | Below Surface /Submerged/Underground              |
| LOC | 5   | Covered < 20 Meters                               |
| LOC | 6   | Covered ≥ 20 Meters but < 30 Meters               |
| LOC | 7   | Covered ≥30 Meters                                |
| LOC | 8   | On Ground Surface                                 |
| LOC | 9   | Depth Known                                       |
| LOC | 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11  | Depth Unknown But Safe to Depth Shown             |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13  | Hull Showing                                      |
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

*OIT*

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

*RFL*

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER*

*Self Emitter*

Indicates that an object has self heating characteristics

SER T

## SER F

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 49  | Gravel               |
| SMS | 50  | Green Rocks          |
| SMS | 51  | Ground (Shells)      |
| SMS | 52  | Iron                 |
| SMS | 53  | Lava                 |
| SMS | 55  | Lead                 |
| SMS | 56  | Loess                |
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |

SMS 500 Not Evaluated  
 SMS 999 Other

*SPC Specular*  
 Flag indicating that the object has the quality of being mirror-like.  
 SPC T  
 SPC F

*SS1 Sensors Supported*  
*SS2*  
*SS3*  
 Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
 SS1(SS2,SS3) T  
 SS1(SS2,SS3) F

*TMR Texture Map Reflectance*  
 Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL Translucency*  
 The degree to which a surface is transparent.  
 Type - Real(6 sd) Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV Transmissivity*  
 Ratio of energy transmitted by an object to the amount of energy incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP Texture Type*  
 Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).  

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

*TXT Text Attribute*  
 Narrative or other description.  
 TXT 0 Actual Value  

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

*USE Usage*  
 Use (identifies the primary user, function, or controlling authority).  

|     |   |          |
|-----|---|----------|
| USE | 0 | Unknown  |
| USE | 4 | National |
| USE | 5 | State    |
| USE | 6 | Private  |
| USE | 7 | Tribal   |
| USE | 8 | Military |



|     |    |                                    |
|-----|----|------------------------------------|
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |
| USE | 85 | Initial Approach Fix               |
| USE | 86 | Final Approach Fix                 |

|     |     |   |
|-----|-----|---|
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

**WID**      **Width**  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|        |               |              |
|--------|---------------|--------------|
| WID    | 0             | Actual Value |
| Units  | Format        | Range        |
| Meters | Short Integer | 0±32,767     |
|        |               | Increment    |
|        |               | 1 M          |
|        |               | Max Chars    |

**WTI**      **Type of wall structure category.**

|     |   |           |
|-----|---|-----------|
| WTI | 0 | Unknown   |
| WTI | 1 | Standing  |
| WTI | 2 | Retaining |
| WTI | 3 | Other     |

#### Subterranean Transportation Feature Class

**ID**

#### F-CODE/DESCRIPTION

SU002 Subway  
AQ130 Tunnel  
AQ065 Culvert

**ABS**      **Absorptivity**  
Ratio of radiant (thermal) energy to the energy incident upon it.

|       |            |            |           |          |
|-------|------------|------------|-----------|----------|
| Units | Format     | Range      | Increment | Max Char |
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**AOO**      **Angle of Orientation**  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|         |               |              |
|---------|---------------|--------------|
| AOO     | 0             | Actual Value |
| Units   | Format        | Range        |
| Degrees | Short Integer | 0-360        |
|         |               | Increment    |
|         |               | 1 DEG        |
|         |               | Max Chars    |

**CCC**      **Color Code Category**

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |
| CCC | 47 | Magenta                |

|     |     |               |
|-----|-----|---------------|
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|     |                                    |           |
|-----|------------------------------------|-----------|
| CIC | Color Intensity Category           |           |
|     | Identifies the intensity of color. |           |
|     | CIC                                | 0 Unknown |
|     | CIC                                | 1 Dark    |
|     | CIC                                | 2 Light   |
|     | CIC                                | 999 Other |

|     |   |  |
|-----|---|--|
| DEP | Depth Below Surface Level   |  |
|     | Distance measured from the highest point at surface level to the lowest point of the feature below the surface. Recorded values are positive numbers. |  |

|        |   |                |       |           |
|--------|---|----------------|-------|-----------|
| DEP    | 0 | Actual Value   |       |           |
| Units  |   | Format         | Range | Increment |
| Meters |   | Floating Point |       | 0.1 M     |

|     |   |            |
|-----|---|------------|
| DFR | Diffuse Reflectance                                 |            |
|     | Radar backscatter coefficient, expressed as a ratio |            |
|     | Units   | Format     |
|     |   | Range      |
|     |   | Increment  |
|     |   | Max Char   |
|     |   | Real(f7.6) |
|     |   | 0.0 .. 1.0 |

|     |  |           |
|-----|--|-----------|
| DY1 | Directivity  |           |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (visual response). |           |
|     | DY1  | 0 Unknown |
|     | DY1  | 1 Uni     |
|     | DY1  | 2 Bi      |
|     | DY1  | 3 Omni    |
|     | DY1  | 999 Other |

|     |  |           |
|-----|--|-----------|
| DY2 | Directivity (IR)   |           |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response). |           |
|     | DY2  | 0 Unknown |
|     | DY2  | 1 Uni     |
|     | DY2  | 2 Bi      |
|     | DY2  | 3 Omni    |
|     | DY2  | 999 Other |

DY3

Directivity (Radar)

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

Emissivity

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

Exitance

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

FOT

Feature Onset

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

IMC

Internal Material Category

Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

LEN

Length/Diameter of Point Feature

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

|     |   |              |
|-----|---|--------------|
| LEN | 0 | Actual Value |
|-----|---|--------------|

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE**      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

**LLL**      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

**LN1**      *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format | Range   | Increment | Max Char   |
|-------|--------|---------|-----------|------------|
|       |        | Integer | 0..       | 2147483647 |

**LN2**      *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format | Range   | Increment | Max Char   |
|-------|--------|---------|-----------|------------|
|       |        | Integer | 0..       | 2147483647 |

**LN3**      *Layer Number (Radar)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format | Range   | Increment | Max Char   |
|-------|--------|---------|-----------|------------|
|       |        | Integer | 0..       | 2147483647 |

**MVC**      *Maximum Vertical clearance*  
The greatest distance between the traveled way and any obstruction vertically above it.  
MVC    0      Actual Value  

| Units | Format         | Range | Increment | Max Chars |
|-------|----------------|-------|-----------|-----------|
| Meter | Floating Point |       | 0.1 M     |           |

**OIT**      *Object Illumination Type*  
Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
Applies to area features.  
OIT    1      SELF  
OIT    2      SUN  
OIT    3      NOSUN

**RFL**      *Reflectance*  
Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER Self Emitter*  
Indicates that an object has self heating characteristics  
SER T  
SER F

*SMS Surface Material Subtype*  
Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |
| SMS | 86 | Shells                   |
| SMS | 87 | Shingle                  |
| SMS | 88 | Silt                     |
| SMS | 89 | Silver                   |
| SMS | 90 | Slag                     |
| SMS | 91 | Sludge                   |
| SMS | 92 | Snow/Ice                 |
| SMS | 93 | Steel                    |
| SMS | 94 | Stone                    |
| SMS | 95 | Travertin                |
| SMS | 96 | Tufa                     |
| SMS | 97 | Uranium                  |
| SMS | 98 | Volcanic                 |
| SMS | 99 | Volcanic Ash             |



|     |     |                   |
|-----|-----|-------------------|
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*      *Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP*      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).  
TTP    1      RGB  
TTP    2      GRAY  
TTP    3      MULTI  
TTP    4      SMFD

*TUC*      *Transportation Use Category*  
Identifies the primary user, function, or authority of the transportation system.  
TUC    0      Unknown  
TUC    1      Both Road and Railroad  
TUC    2      Highway  
TUC    3      Railroad  
TUC    4      Road  
TUC    6      Street

|     |     |                                |
|-----|-----|--------------------------------|
| TUC | 7   | Through Routes                 |
| TUC | 8   | Air Traffic Control            |
| TUC | 12  | Marine                         |
| TUC | 13  | Air                            |
| TUC | 14  | Bus                            |
| TUC | 17  | Pedestrian                     |
| TUC | 18  | Pipeline                       |
| TUC | 19  | Animal                         |
| TUC | 20  | Aircraft                       |
| TUC | 21  | Ship                           |
| TUC | 22  | Automotive                     |
| TUC | 23  | Boat                           |
| TUC | 24  | Bulk Motor Boat/Barge          |
| TUC | 25  | VALUE INTENTIONALLY LEFT BLANK |
| TUC | 26  | Passenger                      |
| TUC | 27  | Chair lift                     |
| TUC | 28  | Ski tow                        |
| TUC | 29  | Sleigh tow                     |
| TUC | 30  | Cart tow                       |
| TUC | 31  | Motor Cycle                    |
| TUC | 36  | Slip Road/Access Road          |
| TUC | 37  | Portage                        |
| TUC | 38  | Canal                          |
| TUC | 39  | Caravan Route                  |
| TUC | 40  | Subway                         |
| TUC | 999 | Other                          |

|     |                                 |               |              |                  |                 |
|-----|---------------------------------|---------------|--------------|------------------|-----------------|
| TXT | Text Attribute                  |               |              |                  |                 |
|     | Narrative or other description. |               |              |                  |                 |
|     | TXT                             | 0             | Actual Value |                  |                 |
|     | <u>Units</u>                    | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     |                                 | Text String   | Lexical      |                  | 256             |

|     |   |               |              |                  |                  |
|-----|---|---------------|--------------|------------------|------------------|
| WID | Width   |               |              |                  |                  |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |               |              |                  |                  |
|     | WID   | 0             | Actual Value |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters  | Short Integer | 0±32,767     | 1 M              |                  |

#### Aerial Transportation Feature Class

ID

#### F-CODE/DESCRIPTION

AQ010 US Aerial Cableway Lines/Ski Lift Lines  
AQ020 Aerial Cableway Pylon/Ski Pylon

ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

ACC

Accuracy Category

Accuracy of geographic position.

ACC0Unknown

ACC1Accurate

ACC2Approximate

ACC3Doubtful

ACC5Disputed

ACC6Undisputed

ACC7Precise

ACC8Abrogated

AOO

Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

AOO0Actual Value

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

ATN

Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

ATN0Unknown

ATN1Marked

ATN2Unmarked

ATN3Lit

ATN4Unlit

ATN999Other

CCC

Color Code Category

CCC0Unknown/Not applicable

CCC1Black

CCC2Blue

CCC3Brown

CCC4Gray

CCC5Green

CCC7Chocolate

CCC9Orange

CCC12Red

CCC14Violet

CCC15White

CCC19Yellow

CCC47Magenta

CCC48Amber

CCC49Buff

CCC51Bluegreen

CCC52Bright Blue

CCC53Aqua

CCC55Bright Green

CCC58Bright Yellow

CCC61Bright Red

CCC63Cyan

CCC64Purple

CCC69Pink

|     |   |               |   |
|-----|---|---------------|---|
|     | CCC   | 70            | Lavender                                      |
|     | CCC   | 999           | Other   |
| CIC | Color Intensity Category<br>Identifies the intensity of color.  |               |   |
|     | CIC   | 0             | Unknown                                       |
|     | CIC   | 1             | Dark  |
|     | CIC   | 2             | Light   |
|     | CIC   | 999           | Other   |
| COC | Conspicuous Category<br>A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |               |   |
|     | COC   | 0             | Unknown                                       |
|     | COC   | 1             | Conspicuous from sea                          |
|     | COC   | 2             | VALUE INTENTIONALLY LEFT BLANK                |
|     | COC   | 3             | Radar Conspicuous from sea                    |
|     | COC   | 4             | Conspicuous from land                         |
|     | COC   | 5             | Conspicuous from air                          |
|     | COC   | 6             | Inconspicuous                                 |
|     | COC   | 7             | Generally Conspicuous                         |
|     | COC   | 8             | Not visual conspicuous                        |
|     | COC   | 9             | Visual conspicuous                            |
|     | COC   | 10            | Not radar conspicuous                         |
|     | COC   | 999           | Other   |
| DFR | Diffuse Reflectance<br>Radar backscatter coefficient, expressed as a ratio  |               |   |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> <u>Increment</u> <u>Max Char</u> |
|     |   | Real(f7.6)    | 0.0 .. 1.0                                    |
| DY1 | Directivity<br>Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).   |               |   |
|     | DY1   | 0             | Unknown                                       |
|     | DY1   | 1             | Uni   |
|     | DY1   | 2             | Bi  |
|     | DY1   | 3             | Omni  |
|     | DY1   | 999           | Other   |
| DY2 | Directivity (IR)<br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |               |   |
|     | DY2   | 0             | Unknown                                       |
|     | DY2   | 1             | Uni   |
|     | DY2   | 2             | Bi  |
|     | DY2   | 3             | Omni  |
|     | DY2   | 999           | Other   |
| DY3 | Directivity (Radar)<br>Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).   |               |   |
|     | DY3   | 0             | Unknown                                       |

|     |     |       |
|-----|-----|-------|
| DY3 | 1   | Uni   |
| DY3 | 2   | Bi    |
| DY3 | 3   | Omni  |
| DY3 | 999 | Other |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

|     |    |  |
|-----|----|--|
| EXS | 1  | Definite                                 |
| EXS | 2  | Doubtful                                 |
| EXS | 3  | Reported                                 |
| EXS | 4  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 5  | Under Construction                       |
| EXS | 6  | Abandoned/Disused                        |
| EXS | 7  | Destroyed                                |
| EXS | 8  | Dismantled                               |
| EXS | 10 | Proposed                                 |
| EXS | 11 | Temporary                                |
| EXS | 12 | Alternate                                |
| EXS | 13 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 16 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 17 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 18 | Permanent                                |
| EXS | 19 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 20 | Corresponds to Recommended Track         |
| EXS | 21 | Does Not Correspond to Recommended Track |
| EXS | 22 | One-Way                                  |
| EXS | 23 | Two-way                                  |
| EXS | 25 | Not Maintained                           |
| EXS | 26 | Maintained                               |
| EXS | 27 | Closed/Locked                            |
| EXS | 28 | Operational                              |
| EXS | 29 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | Not Isolated                             |
| EXS | 31 | Isolated                                 |
| EXS | 33 | Ruined                                   |
| EXS | 34 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 35 | Other                                    |
| EXS | 36 | Commissioned and Operational             |
| EXS | 37 | Commissioned and on Test                 |
| EXS | 38 | Commissioned and out of service          |
| EXS | 39 | Not commissioned and operational         |

|     |     |                                     |
|-----|-----|-------------------------------------|
| EXS | 40  | Not commissioned and on test        |
| EXS | 41  | Not commissioned and out of service |
| EXS | 42  | Continuous operation                |
| EXS | 43  | Intermittent operation              |
| EXS | 44  | Approximate/About                   |
| EXS | 46  | Man-made                            |
| EXS | 48  | Controlled                          |
| EXS | 49  | Non-Controlled                      |
| EXS | 53  | Incomplete                          |
| EXS | 54  | Antique/Ancient                     |
| EXS | 55  | Unexamined/Unsurveyed               |
| EXS | 56  | Unattended/Unwatched                |
| EXS | 59  | Not Usable                          |
| EXS | 61  | Not Isolated                        |
| EXS | 62  | Partially Destroyed                 |
| EXS | 65  | Inactive                            |
| EXS | 998 | Not Applicable                      |
| EXS | 999 | Other                               |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*HGT*      *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT 0      Actual Value  

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

*LEN*      *Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0      Actual Value  

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

*LLE*      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

*LLL*      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

LN1

Layer Number

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2

Layer Number (IR)

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

Layer Number (Radar)

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

OHC

Overhead Clearance Category

The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)

| OHC    | 0              | Actual Value |           |           |
|--------|----------------|--------------|-----------|-----------|
| Units  | Format         | Range        | Increment | Max Chars |
| Meters | Floating Point |              | 0.1 M     |           |

OIT

Object Illumination Type

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |  |  |
|-----|---|-------|--|--|
| OIT | 1 | SELF  |  |  |
| OIT | 2 | SUN   |  |  |
| OIT | 3 | NOSUN |  |  |

OWO

Over Water Obstruction

Indicates the presence of an obstruction over an area of navigable water.

|     |   |  |  |  |
|-----|---|--|--|--|
| OWO | 1 | Feature crosses navigable water        |  |  |
| OWO | 2 | Feature does not cross navigable water |  |  |

RFL

Reflectance

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SER

Self Emitter

Indicates that an object has self heating characteristics

|     |   |  |  |  |
|-----|---|--|--|--|
| SER | T |  |  |  |
| SER | F |  |  |  |

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |



|     |     |                      |
|-----|-----|----------------------|
| SMS | 51  | Ground (Shells)      |
| SMS | 52  | Iron                 |
| SMS | 53  | Lava                 |
| SMS | 55  | Lead                 |
| SMS | 56  | Loess                |
| SMS | 57  | Lumber               |
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

**SPC**      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

**SS1**      *Sensors Supported*  
**SS2**  
**SS3**      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

**TMR**      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TRL**      *Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

**TRV**      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TTP**      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).  
TTP    1      RGB  
TTP    2      GRAY  
TTP    3      MULTI  
TTP    4      SMFD

**TXT**      *Text Attribute*  
Narrative or other description.  
TXT    0      Actual Value  

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

**USE**      *Usage*  
Use (identifies the primary user, function, or controlling authority).  
USE    0      Unknown  
USE    4      National  
USE    5      State  
USE    6      Private  
USE    7      Tribal  
USE    8      Military  
USE    10      Other  
USE    11      Motel/Hotel

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |
| USE | 85 | Initial Approach Fix               |
| USE | 86 | Final Approach Fix                 |
| USE | 87 | Visual Descent Point               |
| USE | 88 | Missed Approach Point              |

|     |     |   |
|-----|-----|---|
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |

USE 998 Sea-Plane landing area  
USE 999 Other

WID Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

| WID    | 0             | Actual Value |           |           |  |
|--------|---------------|--------------|-----------|-----------|--|
| Units  | Format        | Range        | Increment | Max Chars |  |
| Meters | Short Integer | 0±32,767     | 1 M       |           |  |

ZV2 Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

| ZV2    | 0             | Actual Value   |           |           |  |
|--------|---------------|----------------|-----------|-----------|--|
| Units  | Format        | Range          | Increment | Max Chars |  |
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |  |

### Bridge Feature Class

ID

#### F-CODE/DESCRIPTION

AQ040 Bridge/Overpass/Viaduct  
AQ064 Causeway  
AQ070 Ferry Crossing  
AQ045 Bridge Span  
AQ050 Bridge Superstructure  
AQ055 Bridge Tower/Bridge Pylon  
AQ056 Bridge Pier

ABS Absorptivity  
Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC Accuracy Category  
Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

AOO Angle of Orientation  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| AOO     | 0             | Actual Value |           |           |  |
|---------|---------------|--------------|-----------|-----------|--|
| Units   | Format        | Range        | Increment | Max Chars |  |
| Degrees | Short Integer | 0-360        | 1 DEG     |           |  |

|     |  |  |
|-----|--|--|
| ATN | Aids to Navigation   |  |
|     | Indicates whether a feature is marked or unmarked by an aid to navigation.   |  |
|     | ATN 0  | Unknown  |
|     | ATN 1  | Marked   |
|     | ATN 2  | Unmarked   |
|     | ATN 3  | Lit  |
|     | ATN 4  | Unlit  |
| BCC | ATN 999  | Other  |
|     | Bypass Condition Category  |  |
|     | The ease or ability to circumvent a destroyed section of bridge, tunnel or pass within a 2 kilometer distance on each side of the feature. Bypass condition will not consider other bridges in bypass determination. |  |
|     | BCC 0  | Unknown  |
|     | BCC 1  | Easy (Obstacle can be crossed within 2 KM of feature, no work)             |
| BCC | BCC 2  | Difficult (Obstacle can be crossed within 2 KM of feature, work required). |
|     | BCC 3  | Impossible (Obstacle cannot be bypassed within 2 KM of feature)            |
| BDC | Bridge Design Category   |  |
|     | Structural design characteristics of the bridge or bridge segment.   |  |
|     | BDC 0  | Unknown  |
|     | BDC 1  | Arch   |
|     | BDC 2  | Cantilever   |
|     | BDC 3  | Deck   |
|     | BDC 4  | Slab   |
|     | BDC 5  | Floating Bridge  |
|     | BDC 6  | Girder   |
|     | BDC 7  | Stringer (Beam)  |
|     | BDC 8  | Truss  |
|     | BDC 9  | Suspension   |
|     | BDC 11   | Other  |
|     | BDC 12   | Transporter (Ferry Bridge)   |
| BOT | Bridge Opening Type  |  |
|     | The type of structure or mechanism by which a portion of a bridge is moved to allow passage of a vessel.   |  |
|     | BOT 0  | Unknown  |
|     | BOT 4  | Draw/Bascule   |
|     | BOT 10   | Swing  |
|     | BOT 11   | Lift   |
|     | BOT 12   | Retractable  |
|     | BOT 13   | Not Applicable   |
| BRN | Bridge Reference Number  |  |
|     | A unique number relating information to bridge and bridge spans.   |  |
|     | BRN 0  | Actual Value   |
| BSC | Bridge/Bridge Superstructure Category  |  |
|     | Structural design characteristics.   |  |
|     | BSC 0  | Unknown  |

|     |     |                             |
|-----|-----|-----------------------------|
| BSC | 1   | Arch (assume open spandrel) |
| BSC | 2   | Cantilever                  |
| BSC | 3   | Deck                        |
| BSC | 4   | Drawbridge                  |
| BSC | 5   | Floating Bridge/Pontoon     |
| BSC | 6   | Girder                      |
| BSC | 7   | Tower Suspension            |
| BSC | 8   | Truss                       |
| BSC | 9   | Suspension                  |
| BSC | 10  | Swing                       |
| BSC | 11  | Lift                        |
| BSC | 12  | Transporter                 |
| BSC | 13  | Bascule                     |
| BSC | 14  | Unspecified Fixed           |
| BSC | 15  | Slab                        |
| BSC | 16  | Stringer (beam)             |
| BSC | 17  | Arch Suspension             |
| BSC | 18  | Retractable                 |
| BSC | 19  | Suspension, bow string      |
| BSC | 20  | Suspension, cable stayed    |
| BSC | 21  | Moveable Surface            |
| BSC | 22  | Covered                     |
| BSC | 23  | Opening                     |
| BSC | 24  | Footbridge                  |
| BSC | 25  | Fixed                       |
| BSC | 26  | Arch (closed spandrel)      |
| BSC | 27  | Cable Stayed                |
| BSC | 999 | Other                       |

**BSM**      **Bridge Span Mobility**  
Identifies bridge spans that move in some manner allowing passage underneath the span.

|     |   |               |
|-----|---|---------------|
| BSM | 0 | Unknown       |
| BSM | 1 | Moveable Span |
| BSM | 2 | Fixed Span    |

**BSN**      **Bridge Serial Number**  
Unique number associated with a bridge which is used to identify the bridge in other national or intelligence databases.

|     |   |              |
|-----|---|--------------|
| BSN | 0 | Actual Value |
|-----|---|--------------|

**BSP**      **Bridge Span Category**  
Identifies type of moveable span (used for AQ045 when BSM=1).

|     |    |  |
|-----|----|--|
| BSP | 0  | Unknown                                |
| BSP | 1  | Truss                                  |
| BSP | 2  | Truss, moveable or swing               |
| BSP | 3  | Plate girder                           |
| BSP | 4  | Plate girder moveable as vertical lift |
| BSP | 5  | Plate girder moveable as draw bridge   |
| BSP | 6  | Plate girder moveable as bascule       |
| BSP | 7  | Stringer, beam                         |
| BSP | 8  | Stringer, moveable as vertical lift    |
| BSP | 9  | Stringer, moveable as draw bridge      |
| BSP | 10 | Slab                                   |

|     |     |                                 |
|-----|-----|---------------------------------|
| BSP | 11  | Arc, closed span                |
| BSP | 12  | Arc, open span                  |
| BSP | 13  | Floating bridge, pontoon bridge |
| BSP | 14  | Culvert                         |
| BSP | 15  | Frame structure                 |
| BSP | 16  | Vault structure                 |
| BSP | 17  | Unspecified fixed               |
| BSP | 18  | Retractable                     |
| BSP | 999 | Other                           |

**CAP**      **Capacity**  
The capacity of a feature. Units will be qualified using a structured text approach, e.g. 100(cars)[per hour] where the unit is in parentheses ( ) and a unit qualifier is in brackets [ ].

|                 |            |              |       |           |           |
|-----------------|------------|--------------|-------|-----------|-----------|
| CAP             | 0          | Actual Value |       |           |           |
| Units           |            | Format       | Range | Increment | Max Chars |
| Structured Text | ASCII Text |              |       | 80        |           |

|     |     |                        |
|-----|-----|------------------------|
| CCC |     | Color Code Category    |
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

|     |     |                                    |
|-----|-----|------------------------------------|
| CIC |     | Color Intensity Category           |
|     |     | Identifies the intensity of color. |
| CIC | 0   | Unknown                            |
| CIC | 1   | Dark                               |
| CIC | 2   | Light                              |
| CIC | 999 | Other                              |



**COC**      **Conspicuous Category**  
 A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

**DAT**      **Date**

**DFR**      *Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

**DY1**      *Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      *Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      *Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

|     |    |  |
|-----|----|--|
| EXS | 1  | Definite                                 |
| EXS | 2  | Doubtful                                 |
| EXS | 3  | Reported                                 |
| EXS | 4  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 5  | Under Construction                       |
| EXS | 6  | Abandoned/Disused                        |
| EXS | 7  | Destroyed                                |
| EXS | 8  | Dismantled                               |
| EXS | 10 | Proposed                                 |
| EXS | 11 | Temporary                                |
| EXS | 12 | Alternate                                |
| EXS | 13 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 16 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 17 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 18 | Permanent                                |
| EXS | 19 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 20 | Corresponds to Recommended Track         |
| EXS | 21 | Does Not Correspond to Recommended Track |
| EXS | 22 | One-Way                                  |
| EXS | 23 | Two-way                                  |
| EXS | 25 | Not Maintained                           |
| EXS | 26 | Maintained                               |
| EXS | 27 | Closed/Locked                            |
| EXS | 28 | Operational                              |
| EXS | 29 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | Not Isolated                             |
| EXS | 31 | Isolated                                 |
| EXS | 32 | Navigable                                |
| EXS | 33 | Ruined                                   |
| EXS | 34 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 35 | Other                                    |
| EXS | 36 | Commissioned and Operational             |
| EXS | 37 | Commissioned and on Test                 |
| EXS | 38 | Commissioned and out of service          |
| EXS | 39 | Not commissioned and operational         |
| EXS | 40 | Not commissioned and on test             |
| EXS | 41 | Not commissioned and out of service      |
| EXS | 42 | Continuous operation                     |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 43  | Intermittent operation  |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 61  | Not Isolated            |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

FCL Ferry Crossing Length  
Length of crossing between shore points.

| FCL    | 0             | Actual Value |           |           |
|--------|---------------|--------------|-----------|-----------|
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

FCO Feature Configuration  
Configuration of feature.

|     |     |                          |
|-----|-----|--------------------------|
| FCO | 0   | Unknown                  |
| FCO | 1   | Dispersed                |
| FCO | 2   | Multiple                 |
| FCO | 3   | Single                   |
| FCO | 4   | Inclined                 |
| FCO | 5   | Divided same widths      |
| FCO | 6   | Divided different widths |
| FCO | 7   | Non-divided              |
| FCO | 8   | Poorly defined           |
| FCO | 9   | Well-defined             |
| FCO | 11  | Double                   |
| FCO | 12  | Justaxposition           |
| FCO | 999 | Other                    |

FER Ferry Type  
Indicates whether or not ferry travels along cables.

|     |     |                       |
|-----|-----|-----------------------|
| FER | 0   | Unknown               |
| FER | 1   | With cables/chains    |
| FER | 2   | Without cables/chains |
| FER | 999 | Other                 |

FOT Feature Onset  
Indicator for changing radar backscatter coefficients.

|     |   |
|-----|---|
| FOT | T |
| FOT | F |

**HDP**      **Hydrographic Depth**  
The depth of the feature below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| HDP          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

**HGT**      **Height Above Surface Level**  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| HGT          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

**IDN**      **Identification Number**  
A unique number relating specific interior map/chart features to border information.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| IDN          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Numeric      | Short Integer | 0±32,767     | 1 Unit           |                  |  |

**IMC**      **Internal Material Category**  
Category code for material internal to an object.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 1 .. 32767   |                  |                 |

**LC1**      **Load Class Type 1**  
Military load classification (weight bearing capacity) Type 1.

LC1      0      Weight bearing capacity for one-way traffic of wheeled vehicles (from STANAG 2253).

**LC2**      **Load Class Type 2**  
Military load classification (weight bearing capacity) Type 2.

LC2      0      Weight bearing capacity for two-way traffic of wheeled vehicles (from STANAG 2253).

**LC3**      **Load Class Type 3**  
Military load classification (weight bearing capacity) Type 3.

LC3      0      Weight bearing capacity for one-way traffic of tracked vehicles (from STANAG 2253).

**LC4**      **Load Class Type 4**  
Military load classification (weight bearing capacity) Type 4.

LC4      0      Weight bearing capacity for two-way traffic of tracked vehicles (from STANAG 2253).

**LEN**      **Length/Diameter of Point Feature**  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN      0      Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

*LLE Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

*LLL Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

*LN1 Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*LN2 Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*LN3 Layer Number (Radar)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*MBI Military Bridge Information*  
A free text field used to indicate if the bridge is subject to preplanned military interdiction.  
MBI 0 Actual Value  

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 256 Char  |

*MCC Surface Material Category (or Material Composition Category)*  
Characteristics of primary material composition of feature.  
MCC 0 Unknown  
MCC 4 Ash  
MCC 5 Asphalt  
MCC 6 Basalt  
MCC 7 Bedrock

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 8  | Boulders                       |
| MCC | 9  | Brick                          |
| MCC | 10 | Calcareous                     |
| MCC | 11 | Cement                         |
| MCC | 12 | Chalk                          |
| MCC | 13 | Chemical                       |
| MCC | 14 | Cinders                        |
| MCC | 15 | Cirripedia                     |
| MCC | 16 | Clay                           |
| MCC | 17 | Coal                           |
| MCC | 18 | Cobble                         |
| MCC | 19 | Coke                           |
| MCC | 20 | Composition                    |
| MCC | 21 | Concrete                       |
| MCC | 22 | Conglomerate                   |
| MCC | 23 | Copper                         |
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |

|     |     |                      |
|-----|-----|----------------------|
| MCC | 66  | Mussels              |
| MCC | 67  | Oil                  |
| MCC | 68  | Oil Blister          |
| MCC | 69  | Ooze                 |
| MCC | 70  | Oysters              |
| MCC | 71  | Paper                |
| MCC | 72  | Part Metal           |
| MCC | 73  | Pebbles              |
| MCC | 74  | Plastic              |
| MCC | 75  | Polyzoa              |
| MCC | 76  | Porphyry             |
| MCC | 77  | Prestressed Concrete |
| MCC | 78  | Pteropods            |
| MCC | 79  | Pumice               |
| MCC | 80  | Quartz               |
| MCC | 81  | Radiolaria           |
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |
| MCC | 999 | Other                |

MCS Material Composition Secondary  
Secondary material composition of the feature.

|     |     |               |
|-----|-----|---------------|
| MCS | 0   | Unknown       |
| MCS | 4   | Ash           |
| MCS | 8   | Boulders      |
| MCS | 12  | Chalk         |
| MCS | 14  | Cinders       |
| MCS | 15  | Cirripedia    |
| MCS | 16  | Clay          |
| MCS | 18  | Cobble        |
| MCS | 24  | Coral         |
| MCS | 25  | Coral Head    |
| MCS | 28  | Diatoms       |
| MCS | 36  | Foraminifera  |
| MCS | 37  | Funus         |
| MCS | 41  | Globigerina   |
| MCS | 45  | Grass /Thatch |
| MCS | 46  | Gravel        |
| MCS | 48  | Ground        |
| MCS | 52  | Lava          |
| MCS | 58  | Madrepores    |
| MCS | 59  | Manganese     |
| MCS | 61  | Marl          |
| MCS | 63  | Mattes        |
| MCS | 65  | Mud           |
| MCS | 66  | Mussels       |
| MCS | 69  | Ooze          |
| MCS | 70  | Oysters       |
| MCS | 73  | Pebbles       |
| MCS | 75  | Polyzoa       |
| MCS | 78  | Pteropods     |
| MCS | 79  | Pumice        |
| MCS | 80  | Quartz        |
| MCS | 81  | Radiolaria    |
| MCS | 84  | Rock /Rocky   |
| MCS | 88  | Sand          |
| MCS | 90  | Schist        |
| MCS | 92  | Scoria        |
| MCS | 93  | Sea Tangle    |
| MCS | 94  | Seaweed       |
| MCS | 96  | Shells        |
| MCS | 98  | Shingle       |
| MCS | 99  | Silt          |
| MCS | 105 | Spicules      |
| MCS | 106 | Sponge        |
| MCS | 108 | Stone         |
| MCS | 111 | Tufa          |

MVC Maximum Vertical clearance  
The greatest distance between the traveled way and any obstruction vertically above it.

MVC 0 Actual Value



|     |  |                |  |                  |                  |
|-----|--|----------------|--|------------------|------------------|
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                           | <u>Increment</u> | <u>Max Chars</u> |
|     | Meter  | Floating Point |  | 0.1 M            |                  |
| NAM | Name<br>Any Identifier or code.  |                |  |                  |                  |
|     | NAM  | 0              | Actual Value                           |                  |                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                           | <u>Increment</u> | <u>Max Chars</u> |
|     |  | Text String    | Lexical                                |                  | 80               |
| NOS | Number of spans<br>Number of spans in a bridge or aqueduct.  |                |  |                  |                  |
|     | NOS  | 0              | Actual Value                           |                  |                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                           | <u>Increment</u> | <u>Max Chars</u> |
|     | Spans  | Short Integer  | 0±32,767                               | 1 SPAN           |                  |
| OHB | Overall Height of Bridge<br>Vertical distance measured from the lowest point at ground or water level to the highest portion of bridge (including superstructure).                         |                |  |                  |                  |
|     | OHB  | 0              | Actual Value                           |                  |                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                           | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters   | Short Integer  | 0±32,767                               | 1 M              |                  |
| OHC | Overhead Clearance Category<br>The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)   |                |  |                  |                  |
|     | OHC  | 0              | Actual Value                           |                  |                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                           | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters   | Floating Point |  | 0.1 M            |                  |
| OIT | <i>Object Illumination Type</i><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features. |                |  |                  |                  |
|     | OIT  | 1              | SELF                                   |                  |                  |
|     | OIT  | 2              | SUN                                    |                  |                  |
|     | OIT  | 3              | NOSUN                                  |                  |                  |
| OWO | Over Water Obstruction<br>Indicates the presence of an obstruction over an area of navigable water.  |                |  |                  |                  |
|     | OWO  | 1              | Feature crosses navigable water        |                  |                  |
|     | OWO  | 2              | Feature does not cross navigable water |                  |                  |
| RBC | Reliability of Bridge<br>Reliability of bridge characteristics and military load classification based upon data source.  |                |  |                  |                  |
|     | RBC  | 0              | Unknown                                |                  |                  |
|     | RBC  | 1              | Known                                  |                  |                  |
|     | RBC  | 2              | Estimated                              |                  |                  |
| RFL | <i>Reflectance</i><br>Ratio of radiant energy reflected by and object to the amount incident upon it.  |                |  |                  |                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                           | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Real (f7.6)    | 0.0 .. 1.0                             |                  |                  |

RST Road/Runway Surface Type  
The physical surface composition of a road.

|     |     |                  |
|-----|-----|------------------|
| RST | 0   | Unknown          |
| RST | 1   | Hard /Paved      |
| RST | 2   | Loose /Unpaved   |
| RST | 3   | Loose /Light     |
| RST | 4   | Corduroy         |
| RST | 5   | Grass/Sod (Soft) |
| RST | 6   | Natural          |
| RST | 7   | Permanent        |
| RST | 8   | Temporary        |
| RST | 998 | Not Applicable   |
| RST | 999 | Other            |

SER *Self Emitter*

Indicates that an object has self heating characteristics

SER T  
SER F

SHC Safe Horizontal Clearance

Minimum safe horizontal distance between adjacent bridge support structures on either side of a navigable channel passing under the bridge.

| SHC    | 0              | Actual Value |           |           |
|--------|----------------|--------------|-----------|-----------|
| Units  | Format         | Range        | Increment | Max Chars |
| Meters | Floating Point |              | 0.1 M     |           |

SMS *Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 25 | Calcareous               |
| SMS | 26 | Chalk                    |
| SMS | 27 | Cinders                  |
| SMS | 28 | Cirripedia               |
| SMS | 29 | Clay                     |
| SMS | 30 | Coal                     |
| SMS | 31 | Cobble                   |
| SMS | 32 | Coke                     |
| SMS | 33 | Composition              |
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 82  | Schist            |
| SMS | 83  | Spoils/Tailings   |
| SMS | 84  | Scoria            |
| SMS | 85  | Sewage            |
| SMS | 86  | Shells            |
| SMS | 87  | Shingle           |
| SMS | 88  | Silt              |
| SMS | 89  | Silver            |
| SMS | 90  | Slag              |
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1 Sensors Supported*  
*SS2*  
*SS3* Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

TTP

*Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

TUC

*Transportation Use Category*

Identifies the primary user, function, or authority of the transportation system.

|     |     |                                |
|-----|-----|--------------------------------|
| TUC | 0   | Unknown                        |
| TUC | 1   | Both Road and Railroad         |
| TUC | 2   | Highway                        |
| TUC | 3   | Railroad                       |
| TUC | 4   | Road                           |
| TUC | 6   | Street                         |
| TUC | 7   | Through Routes                 |
| TUC | 8   | Air Traffic Control            |
| TUC | 12  | Marine                         |
| TUC | 13  | Air                            |
| TUC | 14  | Bus                            |
| TUC | 17  | Pedestrian                     |
| TUC | 18  | Pipeline                       |
| TUC | 19  | Animal                         |
| TUC | 20  | Aircraft                       |
| TUC | 21  | Ship                           |
| TUC | 22  | Automotive                     |
| TUC | 23  | Boat                           |
| TUC | 24  | Bulk Motor Boat/Barge          |
| TUC | 25  | VALUE INTENTIONALLY LEFT BLANK |
| TUC | 26  | Passenger                      |
| TUC | 27  | Chair lift                     |
| TUC | 28  | Ski tow                        |
| TUC | 29  | Sleigh tow                     |
| TUC | 30  | Cart tow                       |
| TUC | 31  | Motor Cycle                    |
| TUC | 36  | Slip Road/Access Road          |
| TUC | 37  | Portage                        |
| TUC | 38  | Canal                          |
| TUC | 39  | Caravan Route                  |
| TUC | 40  | Subway                         |
| TUC | 999 | Other                          |

TXT

*Text Attribute*

Narrative or other description.

|     |   |              |
|-----|---|--------------|
| TXT | 0 | Actual Value |
|-----|---|--------------|

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

UBC Underbridge Clearance Category  
Clearance below bridge, measured from the lowest surface level to the base of the lower of either a cross beam or the lowest bridge deck.

|        |   |               |          |           |
|--------|---|---------------|----------|-----------|
| UBC    | 0 | Actual Value  |          |           |
| Units  |   | Format        | Range    | Increment |
| Meters |   | Short Integer | 0±32,767 | 1 M       |

USE Usage  
Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |

|     |     |   |
|-----|-----|---|
| USE | 69  | Levee/Dike                                |
| USE | 70  | Reserve/Reservation                       |
| USE | 73  | Terminus/Terminal                         |
| USE | 74  | Low Altitude enroute                      |
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 128 | Mixed Urban or built-up Land  |
| USE | 129 | Military District             |
| USE | 130 | Transportation                |
| USE | 132 | Container                     |
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

|              |                   |                |   |                  |                  |
|--------------|-------------------|----------------|---|------------------|------------------|
| UNI          | Units Category    |                | Units associated strictly with the measured distance lines (FC100) for nautical data. [Reference DIGEST Part 3 for Units associated with DIGEST header data.]                     |                  |                  |
| UNI          | 1                 | Meters         |   |                  |                  |
| UNI          | 11                | Nautical Miles |   |                  |                  |
| UNI          | 22                | Feet           |   |                  |                  |
| UNI          | 23                | Kilometers     |   |                  |                  |
| UNI          | 24                | Yards          |   |                  |                  |
| UT1          | UTM Grid Northing |                | Full 7 digits of the UTM grid coordinate Northing value. (UTS, along with the last five digits of both UT1 and UT2 can designate a feature's coordinates on the earth's surface.) |                  |                  |
| UT1          | 0                 | Actual Value   |   |                  |                  |
| <u>Units</u> |                   | <u>Format</u>  | <u>Range</u>  | <u>Increment</u> | <u>Max Chars</u> |
| Text String  |                   | ASCII Text     |   | 8 Characters     |                  |
| UT2          | UTM Grid Easting  |                | Full 6 digits of the UTM grid coordinate Easting value. (UTS along with the last five digits of both UT1 and UT2 can designate a feature's coordinates on the earth's surface.)   |                  |                  |
| UT2          | 0                 | Actual Value   |   |                  |                  |
| <u>Units</u> |                   | <u>Format</u>  | <u>Range</u>  | <u>Increment</u> | <u>Max Chars</u> |
| Text String  |                   | ASCII Text     |   |                  |                  |
| UZ1          | UTM Grid Zone (1) |                | Two-character grid zone identifier.   |                  |                  |
| UZ1          | 0                 | Actual Value   |   |                  |                  |
| <u>Units</u> |                   | <u>Format</u>  | <u>Range</u>  | <u>Increment</u> | <u>Max Chars</u> |
| Text String  |                   | ASCII Text     |   |                  |                  |



|              |  |
|--------------|--|
| UZ2          | UTM Grid Zone (2)<br>Two-character grid zone identifier.   |
| UZ2          | 0 Actual Value   |
| <u>Units</u> | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Chars</u>   |
| Text String  | ASCII Text   |
| WD1          | Minimum Traveled Way Width<br>Minimum width of the traveled way, excluding hard pavements and shoulders (in decimeters).                               |
| WD1          | 0 Actual Value   |
| <u>Units</u> | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Chars</u>   |
| Decimeters   | Short Integer 0±32,767 1 DM  |
| WD2          | Total Usable Width<br>Total usable width including pavements and hard shoulders (in decimeters).   |
| WD2          | 0 Actual Value   |
| <u>Units</u> | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Chars</u>   |
| Decimeters   | Short Integer 0±32,767 1 DM  |
| WID          | Width<br>A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |
| WID          | 0 Actual Value   |
| <u>Units</u> | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Chars</u>   |
| Meters       | Short Integer 0±32,767 1 M   |
|              | For a bridge, the width is the measurement perpendicular to the axis between the abutments.  |
| YLN          | Length of Greater Percision<br>A measurement of the longer of two linear axes capable of being expressed in decimal meter units.                       |
| YLN          | 0 Actual Value   |
| <u>Units</u> | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Chars</u>   |
| Decimeter    | Floating Point 0.0+32,767.9 0.1 DM   |
| ZV2          | Highest Z-value<br>Elevation above a given datum to the highest portion of the feature.  |
| ZV2          | 0 Actual Value   |
| <u>Units</u> | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Chars</u>   |
| Meters       | Short Integer -400 to 30,000 1 M   |

#### Associated Transportation Feature Class

ID

#### F-CODE/DESCRIPTION

AQ058 Constriction/Expansion  
AQ062 Crossing  
DB150 Mountain Pass  
AQ150 Flight of Steps  
AL060 Dragon Teeth  
AL210 Snow Shed/Rock Shed  
AL\_\_ Route/Distance Marker

*ABS*      *Absorptivity*  
 Ratio of radiant (thermal) energy to the energy incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

*ACC*      *Accuracy Category*  
 Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

*AOO*      *Angle of Orientation*  
 The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| <u>Units</u> | <u>Format</u> | <u>Range</u>  | <u>Increment</u> | <u>Max Chars</u> |
|--------------|---------------|---------------|------------------|------------------|
| AOO          | 0             | Actual Value  |                  |                  |
|              | Degrees       | Short Integer | 0-360            | 1 DEG            |

*CCA*      *Constriction/Expansion Category*  
 The type of a constriction or expansion.

|     |     |                              |
|-----|-----|------------------------------|
| CCA | 0   | Unknown                      |
| CCA | 1   | Gateway                      |
| CCA | 2   | A narrow pass between rocks  |
| CCA | 3   | Road siding on narrow roads  |
| CCA | 4   | A passage through a building |
| CCA | 999 | Other                        |

*CCC*      *Color Code Category*

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |
| CCC | 47 | Magenta                |
| CCC | 48 | Amber                  |
| CCC | 49 | Buff                   |
| CCC | 51 | Bluegreen              |
| CCC | 52 | Bright Blue            |
| CCC | 53 | Aqua                   |
| CCC | 55 | Bright Green           |

|     |     |               |
|-----|-----|---------------|
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

CIC      **Color Intensity Category**  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

DFR      **Diffuse Reflectance**  
Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1      **Directivity**  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2      **Directivity (IR)**  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3      **Directivity (Radar)**  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY      **Emissivity**  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

Existence Category

|     |     |  |
|-----|-----|--|
| EXS | 1   | Definite                                 |
| EXS | 2   | Doubtful                                 |
| EXS | 3   | Reported                                 |
| EXS | 4   | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 6   | Abandoned/Disused                        |
| EXS | 7   | Destroyed                                |
| EXS | 11  | Temporary                                |
| EXS | 12  | Alternate                                |
| EXS | 13  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 16  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 17  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 18  | Permanent                                |
| EXS | 19  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 20  | Corresponds to Recommended Track         |
| EXS | 21  | Does Not Correspond to Recommended Track |
| EXS | 22  | One-Way                                  |
| EXS | 23  | Two-way                                  |
| EXS | 25  | Not Maintained                           |
| EXS | 26  | Maintained                               |
| EXS | 27  | Closed/Locked                            |
| EXS | 28  | Operational                              |
| EXS | 29  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30  | Not Isolated                             |
| EXS | 31  | Isolated                                 |
| EXS | 33  | Ruined                                   |
| EXS | 34  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 35  | Other                                    |
| EXS | 43  | Intermittent operation                   |
| EXS | 44  | Approximate/About                        |
| EXS | 45  | Natural                                  |
| EXS | 46  | Man-made                                 |
| EXS | 48  | Controlled                               |
| EXS | 49  | Non-Controlled                           |
| EXS | 50  | Non-Tidal                                |
| EXS | 51  | Tidal/Tidal Fluctuation                  |
| EXS | 52  | Dissipating                              |
| EXS | 53  | Incomplete                               |
| EXS | 54  | Antique/Ancient                          |
| EXS | 55  | Unexamined/Unsurveyed                    |
| EXS | 56  | Unattended/Unwatched                     |
| EXS | 59  | Not Usable                               |
| EXS | 61  | Not Isolated                             |
| EXS | 62  | Partially Destroyed                      |
| EXS | 65  | Inactive                                 |
| EXS | 998 | Not Applicable                           |
| EXS | 999 | Other                                    |

|     |  |               |                |                  |                  |
|-----|--|---------------|----------------|------------------|------------------|
| FOT | <i>Feature Onset</i>   |               |                |                  |                  |
|     | Indicator for changing radar backscatter coefficients.   |               |                |                  |                  |
|     | FOT T  |               |                |                  |                  |
|     | FOT F  |               |                |                  |                  |
| HGT | Height Above Surface Level   |               |                |                  |                  |
|     | Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  |               |                |                  |                  |
|     | HGT  | 0             | Actual Value   |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters   | Short Integer | 0±32,767       | 1 M              |                  |
| LAB | Feature Label  |               |                |                  |                  |
|     | Label applied to the feature.  |               |                |                  |                  |
|     | LAB  | 0             | Actual Value   |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|     |  | Text String   | Lexical        |                  | 80 Characters    |
| LEN | Length/Diameter of Point Feature   |               |                |                  |                  |
|     | A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.                       |               |                |                  |                  |
|     | LEN  | 0             | Actual Value   |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters   | Short Integer | 0±32,767       | 1 M              |                  |
| LLE | <i>Low Level Effects</i>   |               |                |                  |                  |
|     | Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  |               |                |                  |                  |
|     | LLE T  |               |                |                  |                  |
|     | LLE F  |               |                |                  |                  |
| LLL | <i>Long Lineal</i>   |               |                |                  |                  |
|     | Reference to a point feature which could potentially look like a long linear feature by radar.   |               |                |                  |                  |
|     | Applies to point features  |               |                |                  |                  |
|     | LLL T  |               |                |                  |                  |
|     | LLL F  |               |                |                  |                  |
| LN1 | <i>Layer Number</i>  |               |                |                  |                  |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).   |               |                |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Integer       | 0.. 2147483647 |                  |                  |
| LN2 | <i>Layer Number (IR)</i>   |               |                |                  |                  |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |                |                  |                  |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Integer       | 0.. 2147483647 |                  |                  |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LOC

*Location Category*

Status of feature relative to surrounding area or water.

|     |     |   |
|-----|-----|---|
| LOC | 0   | Unknown   |
| LOC | 1   | Above Surface/Does not Cover (Height Known)       |
| LOC | 2   | Awash at Chart Datum                              |
| LOC | 3   | Dries/Covers (Height Unknown)                     |
| LOC | 4   | Below Surface /Submerged/Underground              |
| LOC | 5   | Covered < 20 Meters                               |
| LOC | 6   | Covered ≥ 20 Meters but < 30 Meters               |
| LOC | 7   | Covered ≥30 Meters                                |
| LOC | 8   | On Ground Surface                                 |
| LOC | 9   | Depth Known                                       |
| LOC | 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11  | Depth Unknown But Safe to Depth Shown             |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13  | Hull Showing                                      |
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

NAM

*Name*

Any Identifier or code.

|     |   |              |
|-----|---|--------------|
| NAM | 0 | Actual Value |
|-----|---|--------------|

|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                                   | <u>Increment</u> | <u>Max Chars</u> |
|-----|--|----------------|--|------------------|------------------|
|     |  | Text String    | Lexical  |                  | 80               |
| OHC | <b>Overhead Clearance Category</b><br>The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)  |                |  |                  |                  |
|     | OHC  | 0              | Actual Value                                   |                  |                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                                   | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters   | Floating Point |  | 0.1 M            |                  |
| OIT | <b>Object Illumination Type</b><br>Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)<br>Applies to area features. |                |  |                  |                  |
|     | OIT  | 1              | SELF   |                  |                  |
|     | OIT  | 2              | SUN  |                  |                  |
|     | OIT  | 3              | NOSUN  |                  |                  |
| PRC | <b>Periodic Restriction Category</b><br>Restriction due to climate or other limitations.   |                |  |                  |                  |
|     | PRC  | 1              | Perennially Open, Not Subject to Ice           |                  |                  |
|     | PRC  | 2              | Subject to Ice                                 |                  |                  |
|     | PRC  | 3              | Permanent Ice                                  |                  |                  |
|     | PRC  | 4              | Seasonal limit - Jan.                          |                  |                  |
|     | PRC  | 5              | Seasonal limit - Feb.                          |                  |                  |
|     | PRC  | 6              | Seasonal limit - Mar.                          |                  |                  |
|     | PRC  | 7              | Seasonal limit - Apr.                          |                  |                  |
|     | PRC  | 8              | Seasonal limit - May                           |                  |                  |
|     | PRC  | 9              | Seasonal limit - Jun.                          |                  |                  |
|     | PRC  | 10             | Seasonal limit - Jul.                          |                  |                  |
|     | PRC  | 11             | Seasonal limit - Aug.                          |                  |                  |
|     | PRC  | 12             | Seasonal limit - Sep.                          |                  |                  |
|     | PRC  | 13             | Seasonal limit - Oct.                          |                  |                  |
|     | PRC  | 14             | Seasonal limit - Nov.                          |                  |                  |
|     | PRC  | 15             | Seasonal limit - Dec.                          |                  |                  |
|     | PRC  | 16             | Closed   |                  |                  |
|     | PRC  | 999            | Other  |                  |                  |
| RFL | <b>Reflectance</b><br>Ratio of radiant energy reflected by and object to the amount incident upon it.  |                |  |                  |                  |
|     | <u>Units</u>   | <u>Format</u>  | <u>Range</u>                                   | <u>Increment</u> | <u>Max Char</u>  |
|     |  | Real (f7.6)    | 0.0 .. 1.0                                     |                  |                  |
| SER | <b>Self Emitter</b><br>Indicates that an object has self heating characteristics   |                |  |                  |                  |
|     | SER  | T              |  |                  |                  |
|     | SER  | F              |  |                  |                  |
| SMS | <b>Surface Material Subtype</b><br>Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.                 |                |  |                  |                  |
|     | SMS  | 0              | Unknown  |                  |                  |
|     | SMS  | 1              | GW Well graded gravels or gravel-sand mixtures |                  |                  |

|     |    |   |
|-----|----|---|
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |
| SMS | 57 | Lumber  |



|     |     |                      |
|-----|-----|----------------------|
| SMS | 58  | Macadam              |
| SMS | 59  | Madrepores           |
| SMS | 60  | Manganese            |
| SMS | 61  | Marble               |
| SMS | 62  | Marl                 |
| SMS | 63  | Mattes               |
| SMS | 64  | Mud                  |
| SMS | 65  | Oil                  |
| SMS | 66  | Oil Blister          |
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

SPC

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

*SSI Sensors Supported*

SS2  
SS3

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*

*Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*

*Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP*

*Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

*TUC*

*Transportation Use Category*

Identifies the primary user, function, or authority of the transportation system.

|     |    |                                |
|-----|----|--------------------------------|
| TUC | 0  | Unknown                        |
| TUC | 1  | Both Road and Railroad         |
| TUC | 2  | Highway                        |
| TUC | 3  | Railroad                       |
| TUC | 4  | Road                           |
| TUC | 6  | Street                         |
| TUC | 7  | Through Routes                 |
| TUC | 8  | Air Traffic Control            |
| TUC | 12 | Marine                         |
| TUC | 13 | Air                            |
| TUC | 14 | Bus                            |
| TUC | 17 | Pedestrian                     |
| TUC | 18 | Pipeline                       |
| TUC | 19 | Animal                         |
| TUC | 20 | Aircraft                       |
| TUC | 21 | Ship                           |
| TUC | 22 | Automotive                     |
| TUC | 23 | Boat                           |
| TUC | 24 | Bulk Motor Boat/Barge          |
| TUC | 25 | VALUE INTENTIONALLY LEFT BLANK |

|     |     |                       |
|-----|-----|-----------------------|
| TUC | 26  | Passenger             |
| TUC | 27  | Chair lift            |
| TUC | 28  | Ski tow               |
| TUC | 29  | Sleigh tow            |
| TUC | 30  | Cart tow              |
| TUC | 31  | Motor Cycle           |
| TUC | 36  | Slip Road/Access Road |
| TUC | 37  | Portage               |
| TUC | 38  | Canal                 |
| TUC | 39  | Caravan Route         |
| TUC | 40  | Subway                |
| TUC | 999 | Other                 |

**TXT Text Attribute**

Narrative or other description.

TXT 0 Actual Value

| Units | Format      | Range   | Increment | Max Char |
|-------|-------------|---------|-----------|----------|
|       | Text String | Lexical |           | 256      |

**WD1**

Minimum Traveled Way Width

Minimum width of the traveled way, excluding hard pavements and shoulders (in decimeters).

WD1 0 Actual Value

| Units      | Format        | Range    | Increment | Max Chars |
|------------|---------------|----------|-----------|-----------|
| Decimeters | Short Integer | 0±32,767 | 1 DM      |           |

**WD2**

Total Usable Width

Total usable width including pavements and hard shoulders (in decimeters).

WD2 0 Actual Value

| Units      | Format        | Range    | Increment | Max Chars |
|------------|---------------|----------|-----------|-----------|
| Decimeters | Short Integer | 0±32,767 | 1 DM      |           |

**WID**

Width

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

WID 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**ZV2**

Highest Z-value

Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value

| Units  | Format        | Range          | Increment | Max Chars |
|--------|---------------|----------------|-----------|-----------|
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

**Transportation Site Feature Class**

**ID**

**F-CODE/DESCRIPTION**

AQ080 Ferry Site

AQ090 Entrance/Exit

AQ100 Landmark Post/Distance Post

AQ110 Mooring Mast  
 AQ021 Mast  
 AQ111 Prepared Raft or Float Bridge Site  
 AQ125 Station (Miscellaneous)  
 AQ135 US Vehicle Stopping Area/Rest Area  
 AQ140 US Vehicle Storage/Parking Area  
 Fueling Areas

*ABS*      *Absorptivity*  
 Ratio of radiant (thermal) energy to the energy incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

*ACC*      Accuracy Category  
 Accuracy of geographic position.

|       |             |
|-------|-------------|
| ACC 0 | Unknown     |
| ACC 1 | Accurate    |
| ACC 2 | Approximate |
| ACC 3 | Doubtful    |
| ACC 5 | Disputed    |
| ACC 6 | Undisputed  |
| ACC 7 | Precise     |
| ACC 8 | Abrogated   |

*AFA*      Facilities available at or in the near vicinity.

|         |                  |
|---------|------------------|
| AFA 0   | Unknown          |
| AFA 1   | Visitors Berth   |
| AFA 2   | Visitors Mooring |
| AFA 3   | Sailmaker        |
| AFA 4   | Chandler         |
| AFA 5   | Provisions       |
| AFA 6   | Physician/Doctor |
| AFA 7   | Pharmacy/Chemist |
| AFA 8   | Drinking Water   |
| AFA 9   | Fuel Station     |
| AFA 10  | Electricity      |
| AFA 11  | Bottle Gas/LPG   |
| AFA 12  | Showers          |
| AFA 13  | Laundrette       |
| AFA 14  | Toilets          |
| AFA 15  | Post Box         |
| AFA 16  | Public Telephone |
| AFA 17  | Refuse Bin       |
| AFA 18  | Water Police     |
| AFA 19  | Helipad          |
| AFA 20  | Ticket Sales     |
| AFA 21  | No Ticket Sales  |
| AFA 22  | Yatch Club       |
| AFA 23  | Boat Hoist       |
| AFA 24  | Boat Yard        |
| AFA 25  | Public Inn       |
| AFA 26  | Restaurant       |
| AFA 999 | Other            |

**AOO**      **Angle of Orientation**  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|              |   |               |              |                  |                  |
|--------------|---|---------------|--------------|------------------|------------------|
| AOO          | 0 | Actual Value  |              |                  |                  |
| <u>Units</u> |   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Degrees      |   | Short Integer | 0-360        | 1 DEG            |                  |

**ATN**      **Aids to Navigation**  
Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

**CCC**      **Color Code Category**

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

**CIC**      **Color Intensity Category**  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

**COC**      **Conspicuous Category**  
 A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

**DFR**      **Diffuse Reflectance**  
 Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**DY1**      **Directivity**  
 Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

**DY2**      **Directivity (IR)**  
 Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

**DY3**      **Directivity (Radar)**  
 Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY*      *Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI*      *Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS*      *Existence Category*

|     |    |                                     |
|-----|----|-------------------------------------|
| EXS | 1  | Definite                            |
| EXS | 2  | Doubtful                            |
| EXS | 3  | Reported                            |
| EXS | 4  | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 5  | Under Construction                  |
| EXS | 6  | Abandoned/Disused                   |
| EXS | 7  | Destroyed                           |
| EXS | 8  | Dismantled                          |
| EXS | 10 | Proposed                            |
| EXS | 11 | Temporary                           |
| EXS | 12 | Alternate                           |
| EXS | 13 | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 16 | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 17 | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 18 | Permanent                           |
| EXS | 19 | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 25 | Not Maintained                      |
| EXS | 26 | Maintained                          |
| EXS | 27 | Closed/Locked                       |
| EXS | 28 | Operational                         |
| EXS | 29 | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 30 | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 30 | Not Isolated                        |
| EXS | 31 | Isolated                            |
| EXS | 32 | Navigable                           |
| EXS | 33 | Ruined                              |
| EXS | 34 | VALUE INTENTIONALLY LEFT BLANK      |
| EXS | 35 | Other                               |
| EXS | 36 | Commissioned and Operational        |
| EXS | 37 | Commissioned and on Test            |
| EXS | 38 | Commissioned and out of service     |
| EXS | 39 | Not commissioned and operational    |
| EXS | 40 | Not commissioned and on test        |
| EXS | 41 | Not commissioned and out of service |
| EXS | 42 | Continuous operation                |
| EXS | 43 | Intermittent operation              |
| EXS | 44 | Approximate/About                   |
| EXS | 45 | Natural                             |
| EXS | 46 | Man-made                            |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Not Isolated            |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*GUG*      *Guyed or Unguyed Category*  
Presence of support wires.  
GUG 0      Unknown  
GUG 1      Guyed  
GUG 2      Unguyed  
GUG 999      Other

*HGT*      *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT 0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

*LEN*      *Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

*LLE*      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F



|     |  |               |                |                  |                 |
|-----|--|---------------|----------------|------------------|-----------------|
| LLL | <i>Long Linear</i>   |               |                |                  |                 |
|     | Reference to a point feature which could potentially look like a long linear feature by radar.   |               |                |                  |                 |
|     | Applies to point features  |               |                |                  |                 |
|     | LLL T<br>LLL F   |               |                |                  |                 |
| LN1 | <i>Layer Number</i>  |               |                |                  |                 |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).   |               |                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|     | Integer  |               | 0.. 2147483647 |                  |                 |
| LN2 | <i>Layer Number (IR)</i>   |               |                |                  |                 |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|     | Integer  |               | 0.. 2147483647 |                  |                 |
| LN3 | <i>Layer Number (Radar)</i>  |               |                |                  |                 |
|     | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared). |               |                |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|     | Integer  |               | 0.. 2147483647 |                  |                 |
| MCC | <i>Surface Material Category (or Material Composition Category)</i>  |               |                |                  |                 |
|     | Characteristics of primary material composition of feature.  |               |                |                  |                 |
|     | MCC  | 0             | Unknown        |                  |                 |
|     | MCC  | 4             | Ash            |                  |                 |
|     | MCC  | 5             | Asphalt        |                  |                 |
|     | MCC  | 6             | Basalt         |                  |                 |
|     | MCC  | 7             | Bedrock        |                  |                 |
|     | MCC  | 8             | Boulders       |                  |                 |
|     | MCC  | 9             | Brick          |                  |                 |
|     | MCC  | 10            | Calcareous     |                  |                 |
|     | MCC  | 11            | Cement         |                  |                 |
|     | MCC  | 12            | Chalk          |                  |                 |
|     | MCC  | 13            | Chemical       |                  |                 |
|     | MCC  | 14            | Cinders        |                  |                 |
|     | MCC  | 15            | Cirripedia     |                  |                 |
|     | MCC  | 16            | Clay           |                  |                 |
|     | MCC  | 17            | Coal           |                  |                 |
|     | MCC  | 18            | Cobble         |                  |                 |
|     | MCC  | 19            | Coke           |                  |                 |
|     | MCC  | 20            | Composition    |                  |                 |
|     | MCC  | 21            | Concrete       |                  |                 |
|     | MCC  | 22            | Conglomerate   |                  |                 |
|     | MCC  | 23            | Copper         |                  |                 |

|     |    |                                |
|-----|----|--------------------------------|
| MCC | 24 | Coral                          |
| MCC | 25 | Coral Head                     |
| MCC | 26 | Desalinated Water              |
| MCC | 27 | Diamonds                       |
| MCC | 28 | Diatoms                        |
| MCC | 29 | Dolomite                       |
| MCC | 30 | Earthen                        |
| MCC | 32 | Eroded Lands                   |
| MCC | 34 | Flynch                         |
| MCC | 35 | Food                           |
| MCC | 36 | Foraminifera                   |
| MCC | 37 | Fucus                          |
| MCC | 40 | Glass                          |
| MCC | 41 | Globigerina                    |
| MCC | 42 | Gold                           |
| MCC | 43 | Granite                        |
| MCC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 45 | Grass/Thatch                   |
| MCC | 46 | Gravel                         |
| MCC | 47 | Green Rocks                    |
| MCC | 48 | Ground                         |
| MCC | 49 | Ground (Shells)                |
| MCC | 50 | Heat                           |
| MCC | 51 | Iron                           |
| MCC | 52 | Lava                           |
| MCC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| MCC | 54 | Lead                           |
| MCC | 55 | Loess                          |
| MCC | 56 | Lumber                         |
| MCC | 57 | Macadam                        |
| MCC | 58 | Madrepores                     |
| MCC | 59 | Manganese                      |
| MCC | 60 | Marble                         |
| MCC | 61 | Marl                           |
| MCC | 62 | Masonry (Brick/Stone)          |
| MCC | 63 | Mattes                         |
| MCC | 64 | Metal                          |
| MCC | 65 | Mud                            |
| MCC | 66 | Mussels                        |
| MCC | 67 | Oil                            |
| MCC | 68 | Oil Blister                    |
| MCC | 69 | Ooze                           |
| MCC | 70 | Oysters                        |
| MCC | 71 | Paper                          |
| MCC | 72 | Part Metal                     |
| MCC | 73 | Pebbles                        |
| MCC | 74 | Plastic                        |
| MCC | 75 | Polyzoa                        |
| MCC | 76 | Porphyry                       |
| MCC | 77 | Prestressed Concrete           |
| MCC | 78 | Pteropods                      |
| MCC | 79 | Pumice                         |
| MCC | 80 | Quartz                         |
| MCC | 81 | Radiolaria                     |

|     |     |                      |
|-----|-----|----------------------|
| MCC | 82  | Radioactive Material |
| MCC | 83  | Reinforced Concrete  |
| MCC | 84  | Rock/Rocky           |
| MCC | 85  | Rubber               |
| MCC | 86  | Rubble               |
| MCC | 87  | Salt                 |
| MCC | 88  | Sand                 |
| MCC | 89  | Sandstone            |
| MCC | 90  | Schist               |
| MCC | 91  | Spoils/Tailings      |
| MCC | 92  | Scoria               |
| MCC | 93  | Sea Tangle           |
| MCC | 94  | Seaweed              |
| MCC | 95  | Sewage               |
| MCC | 96  | Shells               |
| MCC | 98  | Shingle              |
| MCC | 99  | Silt                 |
| MCC | 100 | Silver               |
| MCC | 101 | Slag                 |
| MCC | 102 | Sludge               |
| MCC | 103 | Snow/Ice             |
| MCC | 104 | Soil                 |
| MCC | 105 | Spicules             |
| MCC | 106 | Sponge               |
| MCC | 107 | Steel                |
| MCC | 108 | Stone                |
| MCC | 109 | Sugar                |
| MCC | 110 | Travertin            |
| MCC | 111 | Tufa                 |
| MCC | 112 | Uranium              |
| MCC | 113 | Vegetation Products  |
| MCC | 114 | Volcanic             |
| MCC | 115 | Volcanic Ash         |
| MCC | 116 | Water                |
| MCC | 117 | Wood                 |
| MCC | 118 | Zinc                 |
| MCC | 119 | Evaporites           |
| MCC | 999 | Other                |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

OHC

Overhead Clearance Category

The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)

OHC 0 Actual Value

| Units  | Format         | Range | Increment | Max Chars |
|--------|----------------|-------|-----------|-----------|
| Meters | Floating Point |       | 0.1 M     |           |

*OIT*      *Object Illumination Type*  
 Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
 Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

*RFL*      *Reflectance*  
 Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER*      *Self Emitter*  
 Indicates that an object has self heating characteristics  
 SER T  
 SER F

*SMC*      *Surface Material Category*  
 Surface material composition excluding internal structural material.

|     |    |                   |
|-----|----|-------------------|
| SMC | 0  | Unknown           |
| SMC | 1  | Aircraft          |
| SMC | 2  | Aluminum          |
| SMC | 3  | Ammunition        |
| SMC | 4  | Ash               |
| SMC | 5  | Asphalt           |
| SMC | 6  | Basalt            |
| SMC | 7  | Bedrock           |
| SMC | 8  | Boulders          |
| SMC | 9  | Brick             |
| SMC | 10 | Calcareous        |
| SMC | 11 | Cement            |
| SMC | 12 | Chalk             |
| SMC | 13 | Chemical          |
| SMC | 14 | Cinders           |
| SMC | 15 | Cirripedia        |
| SMC | 16 | Clay              |
| SMC | 17 | Coal              |
| SMC | 18 | Cobble            |
| SMC | 19 | Coke              |
| SMC | 20 | Compositio n      |
| SMC | 21 | Concrete          |
| SMC | 22 | Conglomerate      |
| SMC | 23 | Copper            |
| SMC | 24 | Coral             |
| SMC | 25 | Coral Head        |
| SMC | 26 | Desalinated Water |
| SMC | 27 | Diamonds          |
| SMC | 28 | Diatoms           |
| SMC | 29 | Dolomite          |
| SMC | 30 | Earthen           |
| SMC | 31 | Electric          |
| SMC | 32 | Eroded Lands      |

|     |    |                                |
|-----|----|--------------------------------|
| SMC | 33 | Explosives                     |
| SMC | 34 | Flynch                         |
| SMC | 35 | Food                           |
| SMC | 36 | Foraminifera                   |
| SMC | 37 | Fucus                          |
| SMC | 38 | Gas                            |
| SMC | 39 | Gasoline                       |
| SMC | 40 | Glass                          |
| SMC | 41 | Globigerina                    |
| SMC | 42 | Gold                           |
| SMC | 43 | Granite                        |
| SMC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 45 | Grass/Thatch                   |
| SMC | 46 | Gravel                         |
| SMC | 47 | Green Rocks                    |
| SMC | 48 | Ground                         |
| SMC | 49 | Ground (Shells)                |
| SMC | 50 | Heat                           |
| SMC | 51 | Iron                           |
| SMC | 52 | Lava                           |
| SMC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 54 | Lead                           |
| SMC | 55 | Loess                          |
| SMC | 56 | Lumber                         |
| SMC | 57 | Macadam                        |
| SMC | 58 | Madrepores                     |
| SMC | 59 | Manganese                      |
| SMC | 60 | Marble                         |
| SMC | 61 | Marl                           |
| SMC | 62 | Masonry (Brick/Stone)          |
| SMC | 63 | Mattes                         |
| SMC | 64 | Metal                          |
| SMC | 65 | Mud                            |
| SMC | 66 | Mussels                        |
| SMC | 67 | Oil                            |
| SMC | 68 | Oil Blister                    |
| SMC | 69 | Ooze                           |
| SMC | 70 | Oysters                        |
| SMC | 71 | Paper                          |
| SMC | 72 | Part Metal                     |
| SMC | 73 | Pebbles                        |
| SMC | 74 | Plastic                        |
| SMC | 75 | Polyzoa                        |
| SMC | 76 | Porphyry                       |
| SMC | 77 | Prestressed Concrete           |
| SMC | 78 | Pteropods                      |
| SMC | 79 | Pumice                         |
| SMC | 80 | Quartz                         |
| SMC | 81 | Radiolaria                     |
| SMC | 82 | Radioactive Material           |
| SMC | 83 | Reinforced Concrete            |
| SMC | 84 | Rock/Rocky                     |
| SMC | 85 | Rubber                         |
| SMC | 86 | Rubble                         |

|     |     |                                |
|-----|-----|--------------------------------|
| SMC | 87  | Salt                           |
| SMC | 88  | Sand                           |
| SMC | 89  | Sandstone                      |
| SMC | 90  | Schist                         |
| SMC | 91  | Spoils/Tailings                |
| SMC | 92  | Scoria                         |
| SMC | 93  | Sea Tangle                     |
| SMC | 94  | Seaweed                        |
| SMC | 95  | Sewage                         |
| SMC | 96  | Shells                         |
| SMC | 97  | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 98  | Shingle                        |
| SMC | 99  | Silt                           |
| SMC | 100 | Silver                         |
| SMC | 101 | Slag                           |
| SMC | 102 | Sludge                         |
| SMC | 103 | Snow/Ice                       |
| SMC | 104 | Soil                           |
| SMC | 105 | Spicules                       |
| SMC | 106 | Sponge                         |
| SMC | 107 | Steel                          |
| SMC | 108 | Stone                          |
| SMC | 109 | Sugar                          |
| SMC | 110 | Travertin                      |
| SMC | 111 | Tufa                           |
| SMC | 112 | Uranium                        |
| SMC | 113 | Vegetation Products            |
| SMC | 114 | Volcanic                       |
| SMC | 115 | Volcanic Ash                   |
| SMC | 116 | Water                          |
| SMC | 117 | Wood                           |
| SMC | 118 | Zinc                           |
| SMC | 119 | Distorted surface              |
| SMC | 120 | Sand and gravel                |
| SMC | 121 | Rip-Rap                        |
| SMC | 198 | Kelp                           |
| SMC | 199 | Sandwaves                      |
| SMC | 999 | Other                          |

#### *SMS*

#### *Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |  |
|-----|----|--|
| SMS | 0  | Unknown  |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures   |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures      |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture      |
| SMS | 5  | SW Well graded sand or gravelly sands            |
| SMS | 6  | SP Poorly graded sands or gravelly sands         |
| SMS | 7  | SM Silty sands, sand-silt mixture.               |
| SMS | 8  | SC Clayey sands, sand-clay mixtures              |
| SMS | 9  | ML Inorganic silts and very fine sands           |
| SMS | 10 | CL Inorganic clays of low to medium plasticity   |

|     |    |   |
|-----|----|---|
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flysch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |
| SMS | 57 | Lumber  |
| SMS | 58 | Macadam   |
| SMS | 59 | Madrepores  |
| SMS | 60 | Manganese   |
| SMS | 61 | Marble  |
| SMS | 62 | Marl  |
| SMS | 63 | Mattes  |
| SMS | 64 | Mud   |
| SMS | 65 | Oil   |
| SMS | 66 | Oil Blister   |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 67  | Ooze                 |
| SMS | 70  | Pebbles              |
| SMS | 71  | Pumice               |
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map



| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

*TRL*

*Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.3)   | 0.0 .. 100.0 |                  |                 |

*TRV*

*Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

*TTP*

*Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

*TUC*

*Transportation Use Category*

Identifies the primary user, function, or authority of the transportation system.

|     |    |                                |
|-----|----|--------------------------------|
| TUC | 0  | Unknown                        |
| TUC | 1  | Both Road and Railroad         |
| TUC | 2  | Highway                        |
| TUC | 3  | Railroad                       |
| TUC | 4  | Road                           |
| TUC | 6  | Street                         |
| TUC | 7  | Through Routes                 |
| TUC | 8  | Air Traffic Control            |
| TUC | 12 | Marine                         |
| TUC | 13 | Air                            |
| TUC | 14 | Bus                            |
| TUC | 17 | Pedestrian                     |
| TUC | 18 | Pipeline                       |
| TUC | 19 | Animal                         |
| TUC | 20 | Aircraft                       |
| TUC | 21 | Ship                           |
| TUC | 22 | Automotive                     |
| TUC | 23 | Boat                           |
| TUC | 24 | Bulk Motor Boat/Barge          |
| TUC | 25 | VALUE INTENTIONALLY LEFT BLANK |
| TUC | 26 | Passenger                      |
| TUC | 27 | Chair lift                     |
| TUC | 28 | Ski tow                        |
| TUC | 29 | Sleigh tow                     |
| TUC | 30 | Cart tow                       |
| TUC | 31 | Motor Cycle                    |
| TUC | 36 | Slip Road/Access Road          |
| TUC | 37 | Portage                        |
| TUC | 38 | Canal                          |

TUC 39 Caravan Route  
TUC 40 Subway  
TUC 999 Other

# TXT

## Text Attribute

Narrative or other description.

|       |             |              |           |          |  |
|-------|-------------|--------------|-----------|----------|--|
| TXT   | 0           | Actual Value |           |          |  |
| Units | Format      | Range        | Increment | Max Char |  |
|       | Text String | Lexical      |           | 256      |  |

# USE

## Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |

|     |     |   |
|-----|-----|---|
| USE | 62  | Prisoner                                  |
| USE | 68  | Animal sanctuary                          |
| USE | 69  | Levee/Dike                                |
| USE | 70  | Reserve/Reservation                       |
| USE | 73  | Terminus/Terminal                         |
| USE | 74  | Low Altitude enroute                      |
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 125 | Retaining                     |
| USE | 127 | as a causeway                 |
| USE | 128 | Mixed Urban or built-up Land  |
| USE | 129 | Military District             |
| USE | 130 | Transportation                |
| USE | 132 | Container                     |
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

WD5 Width Top  
The width at the top of a feature (in meters).

|              |               |              |                  |                 |  |
|--------------|---------------|--------------|------------------|-----------------|--|
| WD5          | 0             | Actual Value |                  |                 |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                 |  |

WID Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|              |               |              |                  |                  |  |
|--------------|---------------|--------------|------------------|------------------|--|
| WID          | 0             | Actual Value |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |  |

ZV2 Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|              |               |                |                  |                  |  |
|--------------|---------------|----------------|------------------|------------------|--|
| ZV2          | 0             | Actual Value   |                  |                  |  |
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |  |
| Meters       | Short Integer | -400 to 30,000 | 1 M              |                  |  |

#### Aerodrome Feature Class

ID

#### F-CODE/DESCRIPTION

AQ060 Control Tower  
GB025 Blast Barrier  
GB040 Launch Pad  
GB050 Revetment (Airfield)  
GB057 Shoulder  
GB080 Wind Indicator  
GB160 Decontamination Pad

|     |   |               |                        |                  |                  |
|-----|---|---------------|------------------------|------------------|------------------|
| ABS | Absorptivity  |               |                        |                  |                  |
|     | Ratio of radiant (thermal) energy to the energy incident upon it.   |               |                        |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>           | <u>Increment</u> | <u>Max Char</u>  |
|     |   | Real(f7.6)    | 0.0 .. 1.0             |                  |                  |
| ACC | Accuracy Category   |               |                        |                  |                  |
|     | Accuracy of geographic position.  |               |                        |                  |                  |
|     | ACC   | 0             | Unknown                |                  |                  |
|     | ACC   | 1             | Accurate               |                  |                  |
|     | ACC   | 2             | Approximate            |                  |                  |
|     | ACC   | 3             | Doubtful               |                  |                  |
|     | ACC   | 5             | Disputed               |                  |                  |
|     | ACC   | 6             | Undisputed             |                  |                  |
|     | ACC   | 7             | Precise                |                  |                  |
| ACC | 8   | Abrogated     |                        |                  |                  |
| AOO | Angle of Orientation  |               |                        |                  |                  |
|     | The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded. |               |                        |                  |                  |
|     | AOO   | 0             | Actual Value           |                  |                  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>           | <u>Increment</u> | <u>Max Chars</u> |
|     | Degrees   | Short Integer | 0-360                  | 1 DEG            |                  |
| ATN | Aids to Navigation  |               |                        |                  |                  |
|     | Indicates whether a feature is marked or unmarked by an aid to navigation.  |               |                        |                  |                  |
|     | ATN   | 0             | Unknown                |                  |                  |
|     | ATN   | 1             | Marked                 |                  |                  |
|     | ATN   | 2             | Unmarked               |                  |                  |
|     | ATN   | 3             | Lit                    |                  |                  |
|     | ATN   | 4             | Unlit                  |                  |                  |
|     | ATN   | 999           | Other                  |                  |                  |
| CCC | Color Code Category   |               |                        |                  |                  |
|     | CCC   | 0             | Unknown/Not applicable |                  |                  |
|     | CCC   | 1             | Black                  |                  |                  |
|     | CCC   | 2             | Blue                   |                  |                  |
|     | CCC   | 3             | Brown                  |                  |                  |
|     | CCC   | 4             | Gray                   |                  |                  |
|     | CCC   | 5             | Green                  |                  |                  |
|     | CCC   | 7             | Chocolate              |                  |                  |
|     | CCC   | 9             | Orange                 |                  |                  |
|     | CCC   | 12            | Red                    |                  |                  |
|     | CCC   | 14            | Violet                 |                  |                  |
|     | CCC   | 15            | White                  |                  |                  |
|     | CCC   | 19            | Yellow                 |                  |                  |
|     | CCC   | 47            | Magenta                |                  |                  |
|     | CCC   | 48            | Amber                  |                  |                  |
|     | CCC   | 49            | Buff                   |                  |                  |
|     | CCC   | 51            | Bluegreen              |                  |                  |
|     | CCC   | 52            | Bright Blue            |                  |                  |
|     | CCC   | 53            | Aqua                   |                  |                  |
|     | CCC   | 55            | Bright Green           |                  |                  |

|     |     |               |
|-----|-----|---------------|
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

CIC Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC Conspicuous Category

A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

COD Certainty of Delineation

Indicates knowledge of the feature's limits or information.

|     |   |                                |
|-----|---|--------------------------------|
| COD | 0 | Unknown                        |
| COD | 1 | Limits and Information Known   |
| COD | 2 | Limits and Information Unknown |

COL Character of Light

Any identifier composed of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR].

| COL   | 0           | Actual Value |           |           |  |
|-------|-------------|--------------|-----------|-----------|--|
| Units | Format      | Range        | Increment | Max Chars |  |
|       | Text String | Lexical      |           | 80        |  |

DFR Diffuse Reflectance

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

|     |   |                                |
|-----|---|--------------------------------|
| DY1 | <i>Directivity</i>  |                                |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).  |                                |
|     | DY1 0   | Unknown                        |
|     | DY1 1   | Uni                            |
|     | DY1 2   | Bi                             |
|     | DY1 3   | Omni                           |
| DY2 | <i>Directivity (IR)</i>   |                                |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |                                |
|     | DY2 0   | Unknown                        |
|     | DY2 1   | Uni                            |
|     | DY2 2   | Bi                             |
|     | DY2 3   | Omni                           |
| DY3 | <i>Directivity (Radar)</i>  |                                |
|     | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |                                |
|     | DY3 0   | Unknown                        |
|     | DY3 1   | Uni                            |
|     | DY3 2   | Bi                             |
|     | DY3 3   | Omni                           |
| EMY | <i>Emissivity</i>   |                                |
|     | Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature. |                                |
|     | <u>Units</u>  | <u>Format</u>                  |
|     |   | <u>Range</u>                   |
|     |   | <u>Increment</u>               |
|     |   | <u>Max Char</u>                |
| EXI | <i>Exitance</i>   |                                |
|     | Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm <sup>2</sup> .   |                                |
|     | <u>Units</u>  | <u>Format</u>                  |
|     |   | <u>Range</u>                   |
|     |   | <u>Increment</u>               |
|     |   | <u>Max Char</u>                |
| EXS | <i>Existence Category</i>   |                                |
|     | EXS 1   | Definite                       |
|     | EXS 2   | Doubtful                       |
|     | EXS 3   | Reported                       |
|     | EXS 4   | VALUE INTENTIONALLY LEFT BLANK |
|     | EXS 5   | Under Construction             |
|     | EXS 6   | Abandoned/Disused              |
|     | EXS 7   | Destroyed                      |
|     | EXS 8   | Dismantled                     |
|     | EXS 10  | Proposed                       |
|     | EXS 11  | Temporary                      |
|     | EXS 12  | Alternate                      |
|     | EXS 13  | VALUE INTENTIONALLY LEFT BLANK |

|     |     |  |
|-----|-----|--|
| EXS | 16  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 17  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 18  | Permanent                                |
| EXS | 19  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 20  | Corresponds to Recommended Track         |
| EXS | 21  | Does Not Correspond to Recommended Track |
| EXS | 22  | One-Way                                  |
| EXS | 23  | Two-way                                  |
| EXS | 25  | Not Maintained                           |
| EXS | 26  | Maintained                               |
| EXS | 27  | Closed/Locked                            |
| EXS | 28  | Operational                              |
| EXS | 29  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30  | Not Isolated                             |
| EXS | 31  | Isolated                                 |
| EXS | 33  | Ruined                                   |
| EXS | 34  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 35  | Other                                    |
| EXS | 36  | Commissioned and Operational             |
| EXS | 37  | Commissioned and on Test                 |
| EXS | 38  | Commissioned and out of service          |
| EXS | 39  | Not commissioned and operational         |
| EXS | 40  | Not commissioned and on test             |
| EXS | 41  | Not commissioned and out of service      |
| EXS | 42  | Continuous operation                     |
| EXS | 43  | Intermittent operation                   |
| EXS | 44  | Approximate/About                        |
| EXS | 47  | Swept                                    |
| EXS | 48  | Controlled                               |
| EXS | 49  | Non-Controlled                           |
| EXS | 53  | Incomplete                               |
| EXS | 54  | Antique/Ancient                          |
| EXS | 55  | Unexamined/Unsurveyed                    |
| EXS | 56  | Unattended/Unwatched                     |
| EXS | 59  | Not Usable                               |
| EXS | 61  | Not Isolated                             |
| EXS | 62  | Partially Destroyed                      |
| EXS | 65  | Inactive                                 |
| EXS | 998 | Not Applicable                           |
| EXS | 999 | Other                                    |

#### FCO

#### Feature Configuration

Configuration of feature.

|     |   |                          |
|-----|---|--------------------------|
| FCO | 0 | Unknown                  |
| FCO | 1 | Dispersed                |
| FCO | 2 | Multiple                 |
| FCO | 3 | Single                   |
| FCO | 4 | Inclined                 |
| FCO | 5 | Divided same widths      |
| FCO | 6 | Divided different widths |
| FCO | 7 | Non-divided              |
| FCO | 8 | Poorly defined           |
| FCO | 9 | Well-defined             |



|     |     |                |
|-----|-----|----------------|
| FCO | 11  | Double         |
| FCO | 12  | Justaxposition |
| FCO | 999 | Other          |

**FOT**      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

**HGT**      Height Above Surface Level  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT 0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**IKO**      ICAO Designator  
International Civil Aviation Organization location identifier as designated in ICAO document 7910.  
IKO 0      Actual Value  

| Units | Format      | Range      | Increment | Max Chars |
|-------|-------------|------------|-----------|-----------|
|       | Text String | ASCII Text |           | 256       |

**LEN**      Length/Diameter of Point Feature  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.  
LEN 0      Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE**      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

**LLL**      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

**LN1**      *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**LN2**      *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be

rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

OHC

Overhead Clearance Category

The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)

OHC 0 Actual Value

| Units  | Format         | Range | Increment | Max Chars |
|--------|----------------|-------|-----------|-----------|
| Meters | Floating Point |       | 0.1 M     |           |

RST

Road/Runway Surface Type

The physical surface composition of a road.

|     |     |                  |
|-----|-----|------------------|
| RST | 0   | Unknown          |
| RST | 1   | Hard /Paved      |
| RST | 2   | Loose /Unpaved   |
| RST | 3   | Loose /Light     |
| RST | 4   | Corduroy         |
| RST | 5   | Grass/Sod (Soft) |
| RST | 6   | Natural          |
| RST | 7   | Permanent        |
| RST | 8   | Temporary        |
| RST | 998 | Not Applicable   |
| RST | 999 | Other            |

SMC

Surface Material Category

Surface material composition excluding internal structural material.

|     |    |            |
|-----|----|------------|
| SMC | 0  | Unknown    |
| SMC | 1  | Aircraft   |
| SMC | 2  | Aluminum   |
| SMC | 3  | Ammunition |
| SMC | 4  | Ash        |
| SMC | 5  | Asphalt    |
| SMC | 6  | Basalt     |
| SMC | 7  | Bedrock    |
| SMC | 8  | Boulders   |
| SMC | 9  | Brick      |
| SMC | 10 | Calcareous |
| SMC | 11 | Cement     |

|     |    |                                |
|-----|----|--------------------------------|
| SMC | 12 | Chalk                          |
| SMC | 13 | Chemical                       |
| SMC | 14 | Cinders                        |
| SMC | 15 | Cirripedia                     |
| SMC | 16 | Clay                           |
| SMC | 17 | Coal                           |
| SMC | 18 | Cobble                         |
| SMC | 19 | Coke                           |
| SMC | 20 | Compositio n                   |
| SMC | 21 | Concrete                       |
| SMC | 22 | Conglomerate                   |
| SMC | 23 | Copper                         |
| SMC | 24 | Coral                          |
| SMC | 25 | Coral Head                     |
| SMC | 26 | Desalinated Water              |
| SMC | 27 | Diamonds                       |
| SMC | 28 | Diatoms                        |
| SMC | 29 | Dolomite                       |
| SMC | 30 | Earthen                        |
| SMC | 31 | Electric                       |
| SMC | 32 | Eroded Lands                   |
| SMC | 33 | Explosives                     |
| SMC | 34 | Flynch                         |
| SMC | 35 | Food                           |
| SMC | 36 | Foraminifera                   |
| SMC | 37 | Fucus                          |
| SMC | 38 | Gas                            |
| SMC | 39 | Gasoline                       |
| SMC | 40 | Glass                          |
| SMC | 41 | Globigerina                    |
| SMC | 42 | Gold                           |
| SMC | 43 | Granite                        |
| SMC | 44 | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 45 | Grass/Thatch                   |
| SMC | 46 | Gravel                         |
| SMC | 47 | Green Rocks                    |
| SMC | 48 | Ground                         |
| SMC | 49 | Ground (Shells)                |
| SMC | 50 | Heat                           |
| SMC | 51 | Iron                           |
| SMC | 52 | Lava                           |
| SMC | 53 | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 54 | Lead                           |
| SMC | 55 | Loess                          |
| SMC | 56 | Lumber                         |
| SMC | 57 | Macadam                        |
| SMC | 58 | Madrepores                     |
| SMC | 59 | Manganese                      |
| SMC | 60 | Marble                         |
| SMC | 61 | Marl                           |
| SMC | 62 | Masonry (Brick/Stone)          |
| SMC | 63 | Mattes                         |
| SMC | 64 | Metal                          |
| SMC | 65 | Mud                            |

|     |     |                                |
|-----|-----|--------------------------------|
| SMC | 66  | Mussels                        |
| SMC | 67  | Oil                            |
| SMC | 68  | Oil Blister                    |
| SMC | 69  | Ooze                           |
| SMC | 70  | Oysters                        |
| SMC | 71  | Paper                          |
| SMC | 72  | Part Metal                     |
| SMC | 73  | Pebbles                        |
| SMC | 74  | Plastic                        |
| SMC | 75  | Polyzoa                        |
| SMC | 76  | Porphyry                       |
| SMC | 77  | Prestressed Concrete           |
| SMC | 78  | Pteropods                      |
| SMC | 79  | Pumice                         |
| SMC | 80  | Quartz                         |
| SMC | 81  | Radiolaria                     |
| SMC | 82  | Radioactive Material           |
| SMC | 83  | Reinforced Concrete            |
| SMC | 84  | Rock/Rocky                     |
| SMC | 85  | Rubber                         |
| SMC | 86  | Rubble                         |
| SMC | 87  | Salt                           |
| SMC | 88  | Sand                           |
| SMC | 89  | Sandstone                      |
| SMC | 90  | Schist                         |
| SMC | 91  | Spoils/Tailings                |
| SMC | 92  | Scoria                         |
| SMC | 93  | Sea Tangle                     |
| SMC | 94  | Seaweed                        |
| SMC | 95  | Sewage                         |
| SMC | 96  | Shells                         |
| SMC | 97  | VALUE INTENTIONALLY LEFT BLANK |
| SMC | 98  | Shingle                        |
| SMC | 99  | Silt                           |
| SMC | 100 | Silver                         |
| SMC | 101 | Slag                           |
| SMC | 102 | Sludge                         |
| SMC | 103 | Snow/Ice                       |
| SMC | 104 | Soil                           |
| SMC | 105 | Spicules                       |
| SMC | 106 | Sponge                         |
| SMC | 107 | Steel                          |
| SMC | 108 | Stone                          |
| SMC | 109 | Sugar                          |
| SMC | 110 | Travertin                      |
| SMC | 111 | Tufa                           |
| SMC | 112 | Uranium                        |
| SMC | 113 | Vegetation Products            |
| SMC | 114 | Volcanic                       |
| SMC | 115 | Volcanic Ash                   |
| SMC | 116 | Water                          |
| SMC | 117 | Wood                           |
| SMC | 118 | Zinc                           |
| SMC | 119 | Distorted surface              |

|     |     |                 |
|-----|-----|-----------------|
| SMC | 120 | Sand and gravel |
| SMC | 121 | Rip-Rap         |
| SMC | 198 | Kelp            |
| SMC | 199 | Sandwaves       |
| SMC | 999 | Other           |

# USE

## Usage

Use (identifies the primary user, function, or controlling authority).

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 0  | Unknown                            |
| USE | 4  | National                           |
| USE | 5  | State                              |
| USE | 6  | Private                            |
| USE | 7  | Tribal                             |
| USE | 8  | Military                           |
| USE | 10 | Other                              |
| USE | 11 | Motel/Hotel                        |
| USE | 12 | Apartment                          |
| USE | 13 | Open                               |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK     |
| USE | 16 | City                               |
| USE | 17 | Advertising Billboard              |
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |

|     |     |   |
|-----|-----|---|
| USE | 73  | Terminus/Terminal                         |
| USE | 74  | Low Altitude enroute                      |
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 130 | Transportation                |
| USE | 132 | Container                     |
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

WD1 Minimum Traveled Way Width  
Minimum width of the traveled way, excluding hard pavements and shoulders (in decimeters).

|              |   |               |              |                  |                  |
|--------------|---|---------------|--------------|------------------|------------------|
| WD1          | 0 | Actual Value  |              |                  |                  |
| <u>Units</u> |   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Decimeters   |   | Short Integer | 0±32,767     | 1 DM             |                  |

WD2 Total Usable Width  
Total usable width including pavements and hard shoulders (in decimeters).

|              |   |               |              |                  |                  |
|--------------|---|---------------|--------------|------------------|------------------|
| WD2          | 0 | Actual Value  |              |                  |                  |
| <u>Units</u> |   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Decimeters   |   | Short Integer | 0±32,767     | 1 DM             |                  |

WID Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|              |   |               |              |                  |                  |
|--------------|---|---------------|--------------|------------------|------------------|
| WID          | 0 | Actual Value  |              |                  |                  |
| <u>Units</u> |   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       |   | Short Integer | 0±32,767     | 1 M              |                  |

ZV2 Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|              |   |               |                |                  |                  |
|--------------|---|---------------|----------------|------------------|------------------|
| ZV2          | 0 | Actual Value  |                |                  |                  |
| <u>Units</u> |   | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
| Meters       |   | Short Integer | -400 to 30,000 | 1 M              |                  |

#### Ports (Aeronautical) Feature Class

ID

#### F-CODE/DESCRIPTION

GB005 Airport/Airfield  
GB006 Airfield

GB007 Airport Area  
 GB065 Seaplane Base  
 GB070 Seaplane Landing/Seaplane Take-Off Area  
 GB030 Helicopter Landing Pad  
 GB035 Heliport

**ABS**      *Absorptivity*  
 Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**ACC**      Accuracy Category

|     |    |                 |
|-----|----|-----------------|
| ACC | 0  | Unknown         |
| ACC | 1  | Accurate        |
| ACC | 12 | <= 0.001 sec    |
| ACC | 13 | 0.001 - 0.1 sec |
| ACC | 14 | 0.1 - 1.0 sec   |
| ACC | 15 | 1.0 - 10.0 sec  |
| ACC | 16 | 10.0 - 60.0 sec |

**AOO**      Angle of Orientation  
 The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|     |   |              |
|-----|---|--------------|
| AOO | 0 | Actual Value |
|-----|---|--------------|

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

**APT**      Airfield Type  
 Unique airfield type.

|     |     |  |
|-----|-----|--|
| APT | 0   | Unknown  |
| APT | 1   | Major Airfield                                 |
| APT | 2   | Minor Airfield                                 |
| APT | 3   | Light/General Aviation Aircraft Operating Only |
| APT | 4   | Seaplane Base                                  |
| APT | 5   | Glider Site                                    |
| APT | 6   | Microlight/Ultralight Site                     |
| APT | 7   | Hang Glider Site                               |
| APT | 8   | Winch Launched Hang Glider Site                |
| APT | 9   | Heliport                                       |
| APT | 10  | Helicopter Site                                |
| APT | 11  | Heliport at Hospitals                          |
| APT | 12  | Emergency                                      |
| APT | 13  | Parascending/Parasailing Site                  |
| APT | 14  | Airport/Airfield                               |
| APT | 999 | Other  |

**ATI**      Automated Terminal Information Services

|     |   |               |
|-----|---|---------------|
| ATI | 0 | Unknown       |
| ATI | 1 | Available     |
| ATI | 2 | Not Available |

**ATS**      Automated Terminal Information Service (ATIS)

|     |   |         |
|-----|---|---------|
| ATS | 0 | Unknown |
|-----|---|---------|



|     |   |                      |
|-----|---|----------------------|
| ATS | 1 | Continuous           |
| ATS | 2 | Less Than Continuous |

CCC      Color Code Category

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

CIC      Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC      Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

COU Country Code

CPB Specific Capabilities

|     |   |                     |
|-----|---|---------------------|
| CPB | 0 | Unknown             |
| CPB | 1 | Radar Capable       |
| CPB | 2 | VHF 121.5 monitored |
| CPB | 3 | UHF 243.0 monitored |
| CPB | 4 | Both 121.5 & 243.0  |

DFR *Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

CSP *Country/State/Province Code*

DY1 *Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2 *Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3 *Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY *Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI *Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

Existence Category

|     |    |  |
|-----|----|--|
| EXS | 1  | Definite                                 |
| EXS | 2  | Doubtful                                 |
| EXS | 3  | Reported                                 |
| EXS | 4  | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 5  | Under Construction                       |
| EXS | 6  | Abandoned/Disused                        |
| EXS | 7  | Destroyed                                |
| EXS | 8  | Dismantled                               |
| EXS | 10 | Proposed                                 |
| EXS | 11 | Temporary                                |
| EXS | 12 | Alternate                                |
| EXS | 13 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 16 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 17 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 18 | Permanent                                |
| EXS | 19 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 20 | Corresponds to Recommended Track         |
| EXS | 21 | Does Not Correspond to Recommended Track |
| EXS | 22 | One-Way                                  |
| EXS | 23 | Two-way                                  |
| EXS | 25 | Not Maintained                           |
| EXS | 26 | Maintained                               |
| EXS | 27 | Closed/Locked                            |
| EXS | 28 | Operational                              |
| EXS | 29 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 30 | Not Isolated                             |
| EXS | 31 | Isolated                                 |
| EXS | 33 | Ruined                                   |
| EXS | 34 | VALUE INTENTIONALLY LEFT BLANK           |
| EXS | 35 | Other                                    |
| EXS | 36 | Commissioned and Operational             |
| EXS | 37 | Commissioned and on Test                 |
| EXS | 38 | Commissioned and out of service          |
| EXS | 39 | Not commissioned and operational         |
| EXS | 40 | Not commissioned and on test             |
| EXS | 41 | Not commissioned and out of service      |
| EXS | 42 | Continuous operation                     |
| EXS | 43 | Intermittent operation                   |
| EXS | 44 | Approximate/About                        |
| EXS | 47 | Swept                                    |
| EXS | 48 | Controlled                               |
| EXS | 49 | Non-Controlled                           |
| EXS | 53 | Incomplete                               |
| EXS | 54 | Antique/Ancient                          |
| EXS | 55 | Unexamined/Unsurveyed                    |
| EXS | 56 | Unattended/Unwatched                     |
| EXS | 59 | Not Usable                               |
| EXS | 61 | Not Isolated                             |
| EXS | 62 | Partially Destroyed                      |

|     |     |                |
|-----|-----|----------------|
| EXS | 65  | Inactive       |
| EXS | 998 | Not Applicable |
| EXS | 999 | Other          |

# FCO

## Feature Configuration

Configuration of feature.

|     |     |                          |
|-----|-----|--------------------------|
| FCO | 0   | Unknown                  |
| FCO | 1   | Dispersed                |
| FCO | 2   | Multiple                 |
| FCO | 3   | Single                   |
| FCO | 4   | Inclined                 |
| FCO | 5   | Divided same widths      |
| FCO | 6   | Divided different widths |
| FCO | 7   | Non-divided              |
| FCO | 8   | Poorly defined           |
| FCO | 9   | Well-defined             |
| FCO | 11  | Double                   |
| FCO | 12  | Justaxposition           |
| FCO | 999 | Other                    |

# FOT

## Feature Onset

Indicator for changing radar backscatter coefficients.

|     |   |
|-----|---|
| FOT | T |
| FOT | F |

# FQM

Frequency of ATIS (Megahertz)

# IAP

## Instrument Approach Procedure

|     |   |                                       |
|-----|---|---------------------------------------|
| IAP | 0 | Unknown                               |
| IAP | 1 | DoD Approved IAP and/or Radar Minimum |
| IAP | 2 | No DoD Approved IAP                   |

# IKO

ICAO Code

# LEN

## Length of Longest Runway (Feet)

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

| LEN       | 0             | Actual Value |
|-----------|---------------|--------------|
| Units     | Format        | Range        |
| Meters    | Short Integer | 0±32,767     |
| Increment | Max Chars     |              |
| 1 M       |               |              |

# LFA

## Light Function Aeronautical

Type of lighting provided or type of lighting system used.

|     |   |  |
|-----|---|--|
| LFA | 0 | Unknown                                  |
| LFA | 1 | Airport Terminal Lights                  |
| LFA | 2 | Apron Flood                              |
| LFA | 3 | Boundary Lights                          |
| LFA | 4 | Runway Centerline Lighting               |
| LFA | 5 | Runway End Identification Lighting(REIL) |
| LFA | 6 | Runway Lights /Runway Edge Lights        |
| LFA | 7 | Sequenced Strobe                         |
| LFA | 8 | Taxiway Lighting                         |
| LFA | 9 | Visual Approach Slope Indicator (VASI)   |

|     |     |   |
|-----|-----|---|
| LFA | 10  | Rotating Beacon                                       |
| LFA | 11  | Obstruction Lighting                                  |
| LFA | 12  | Threshold Light(s)                                    |
| LFA | 13  | Touchdown Zone Lighting                               |
| LFA | 14  | Other Airport Lighting                                |
| LFA | 15  | ALSF-I (Approach Lighting System. with seq. flashing) |
| LFA | 16  | ALSF-II   |
| LFA | 17  | (SSALF)   |
| LFA | 18  | (SSALR)   |
| LFA | 19  | (MALSF)   |
| LFA | 20  | (MALSR)   |
| LFA | 21  | Landing Direction Indicator (LDIN)                    |
| LFA | 22  | RAIL (Runway Alignment Indicator Lights)              |
| LFA | 23  | ODALS (Omni Directional Approach Landing System).     |
| LFA | 24  | Other Approach Lighting                               |
| LFA | 25  | Precision Approach Path Indicator (PAPI)              |
| LFA | 26  | Strobe  |
| LFA | 27  | Runway Flood  |
| LFA | 28  | Variable Intensity Runway Lights                      |
| LFA | 29  | Portable Runway Lights                                |
| LFA | 30  | Flares  |
| LFA | 31  | Wind Indicator Lights                                 |
| LFA | 32  | Visual Approach Slope Indicator (3 bar)               |
| LFA | 33  | Optical Landing System                                |
| LFA | 51  | Aeronautical  |
| LFA | 52  | Auxiliary   |
| LFA | 53  | Beacon  |
| LFA | 54  | VALUE INTENTIONALLY LEFT BLANK                        |
| LFA | 55  | Fishing   |
| LFA | 56  | Fog Detector  |
| LFA | 57  | Harbor  |
| LFA | 58  | Horizontal  |
| LFA | 59  | Obstruction   |
| LFA | 60  | Occasional  |
| LFA | 61  | Private   |
| LFA | 62  | Range   |
| LFA | 63  | Seasonal  |
| LFA | 64  | Tidal   |
| LFA | 65  | Vertical  |
| LFA | 66  | Articulated   |
| LFA | 67  | Primary   |
| LFA | 68  | Secondary   |
| LFA | 69  | Major   |
| LFA | 70  | Minor   |
| LFA | 71  | Visual Approach Slope Indicator (2 bar)               |
| LFA | 72  | Identification Beacon                                 |
| LFA | 90  | Prior Request Needed for Lights                       |
| LFA | 91  | Pilot Controlled Lights                               |
| LFA | 999 | Other   |

#### *LLE*

#### *Low Level Effects*

Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T

LLE F

LLL

*Long Lineal*

Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T

LLL F

LN1

*Layer Number*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2

*Layer Number (IR)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

MAG

Magnetic Variation

Horizontal angle between true north and magnetic north measured East (positive value) or West (negative value) according to whether magnetic north lies east or west of true north.

MAG 0 Actual Value

| Units   | Format         | Range | Increment | Max Char |
|---------|----------------|-------|-----------|----------|
| Degrees | Floating Point | ±180  |           |          |

NAM

Name

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

PHT

Predominant Height

Height of 51% or more of the feature. If not obtainable, then the average height of the feature will be used.

PHT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

|     |   |  |
|-----|---|--|
| RLT | Runway Lighting   |  |
| RLT | 0   | Unknown  |
| RLT | 1   | Prior Request Needed   |
| RLT | 2   | Pilot Controlled   |
| RST | Runway Surface Type   |  |
| RST | 0   | Unknown  |
| RST | 1   | Hard/Paved   |
| RST | 2   | Loose/Unpaved ( <i>Helicopter Landing Pad</i> )                                      |
| RST | 3   | Loose/Light ( <i>Helicopter Landing Pad</i> )  |
| RST | 5   | Grass/Sod (Soft) ( <i>Helicopter Landing Pad</i> )                                   |
| RST | 6   | Natural ( <i>Helicopter Landing Pad</i> )  |
| RST | 7   | Permanent ( <i>Helicopter Landing Pad</i> )  |
| RST | 8   | Temporary ( <i>Helicopter Landing Pad</i> )  |
| RST | 999   | Other  |
| SMC | Surface Material Category ( <i>Helicopter Landing Pad</i> )   |  |
| SMC | 0   | Unknown  |
| SMC | 5   | Asphalt  |
| SMC | 30  | Earthen  |
| SMC | 46  | Gravel   |
| SMC | 57  | Macadam  |
| SMC | 107   | Steel  |
| SMC | 122   | Pierced Steel Planking   |
| SMC | 123   | Graded or Rolled Earth, Grass on Graded Earth  |
| SMC | 124   | Grass on Earth - not Graded or Rolled  |
| SMC | 125   | Membrane, Plastic or Other Coated Fiber  |
| SQN | Sequence Number ( <i>Helicopter Landing Pad</i> )   |  |
| TYP | Type ( <i>of Heliport</i> )   |  |
| TYP | 0   | Unknown  |
| TYP | 1   | Active Military Heliport with same facilities as a Class A airport.                  |
| TYP | 2   | Active Civil Heliport with the same minimal facilities as a Class A airport.         |
| TYP | 3   | Active Military Heliport with less than the minimal facilities of a Class A airport. |
| TYP | 4   | Active Civil Heliport with less than the minimal facilities of a Class A airport.    |
| UID | Unique ID   |  |
| USE | Usage Code  |  |
| USE | 0   | Unknown  |
| USE | 8   | Military   |
| USE | 22  | Joint  |
| USE | 49  | Civil  |
| USE | 50  | Inactive/Limited   |
| WID | Width of Runway (Feet) ( <i>Helicopter Landing Pad</i> )  |  |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |  |

|       |               |              |           |           |
|-------|---------------|--------------|-----------|-----------|
| WID   | 0             | Actual Value |           |           |
| Units | Format        | Range        | Increment | Max Chars |
| Feet  | Short Integer | 0±32,767     | 1 M       |           |

ZV3 Airfield Elevation (Feet)  
The highest point of an airport's usable runways measured in meters from mean sea level.

|        |               |                |           |          |
|--------|---------------|----------------|-----------|----------|
| ZV3    | 0             | Actual Value   |           |          |
| Units  | Format        | Range          | Increment | Max Char |
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

#### Airspace Feature Class

ID

#### F-CODE/DESCRIPTION

GA005 Airspace  
GA015 Special Use Airspace  
GA020 Airspace Boundary Segment  
GA025 Special Use Airspace Segment

AIA Airspace Identification Attribute

ATL Air Traffic Service Level

ATL 0 Unknown  
ATL 1 High and Low  
ATL 2 High (Above FL195)  
ATL 3 Low (Below FL195)

AUA Airspace Use Area Type

AUA -32767 NULL (*Airspace*)  
AUA 0 Unknown  
AUA 1 Advisory Area (ADA)  
AUA 2 Air Defense Identification Zone (ADIZ)  
AUA 3 Air Route Traffic Control Center (ARTCC)  
AUA 4 Alert Area  
AUA 5 Area Control Center (ACC)  
AUA 6 Buffer Zone (BZ)  
AUA 7 Canadian Air Defense Identification Zone (CADIZ)  
AUA 8 Control Area (CTA)  
AUA 9 Control Zone (CTLZ)  
AUA 10 Danger Area  
AUA 11 Dew East Military Identification Zone (DEMIZ)  
AUA 12 Distant Early Warning Identification Zone (DEWIZ)  
AUA 13 Flight Information Region (FIR)  
AUA 14 French Peripheral Identification Zone (LIP)  
AUA 15 Military Aerodrome Traffic Zone (MAIZ)  
AUA 16 Military Common Area Control (MCAC)  
AUA 17 Military Climb Corridor (MCC)  
AUA 18 Military Flying Area (Canada, MFA)  
AUA 19 Mid-Canada Identification Zone (MIDIZ)  
AUA 20 Military Operations Area (MOA)  
AUA 21 Military Terminal Control Area (MTCA)  
AUA 22 Military Upper Control Area (MUCA)



|     |     |   |
|-----|-----|---|
| AUA | 23  | Oceanic Control Area (non-FAA) (OCA)                |
| AUA | 24  | Operating Area (OPAREA)                             |
| AUA | 25  | Prohibited Area                                     |
| AUA | 26  | Positive Control Area (PCA)                         |
| AUA | 27  | Positive Control Zone (PCZ)                         |
| AUA | 28  | Radar Area  |
| AUA | 29  | Restricted Area                                     |
| AUA | 30  | Security Identification Zone (SIZ)                  |
| AUA | 31  | Special Air Traffic Rules Area                      |
| AUA | 32  | Special Rules Zone                                  |
| AUA | 33  | Transition Area (For Chart Use Only - TA)           |
| AUA | 34  | Terminal Control Area (TCA)                         |
| AUA | 35  | Continental Control Area (CCA)                      |
| AUA | 37  | Terminal Radar Service Area (TRSA)                  |
| AUA | 38  | Upper Advisory Area (UDA)                           |
| AUA | 39  | Upper Control Area (UTA)                            |
| AUA | 40  | Upper Flight Information Region (UIR)               |
| AUA | 41  | Warning Area  |
| AUA | 42  | Zone of Interior (ZI)                               |
| AUA | 43  | VALUE INTENTIONALLY LEFT BLANK                      |
| AUA | 44  | Korea Limited Identification Zone(KLIZ)             |
| AUA | 45  | Uncontrolled Airspace                               |
| AUA | 46  | Controlled Airspace                                 |
| AUA | 47  | Airport Traffic Area (ATA)                          |
| AUA | 48  | Airport Radar Service Area (ARSA)                   |
| AUA | 49  | Controlled Firing Area                              |
| AUA | 50  | Parachute Jump Area                                 |
| AUA | 51  | Airport Advisory Area                               |
| AUA | 52  | Designated Mountainous Area                         |
| AUA | 54  | Non-Free Flying Area                                |
| AUA | 55  | Control Zone - No Fixed Wing Special VFR Permitted  |
| AUA | 56  | Altimeter Change Boundary                           |
| AUA | 57  | Defense Area  |
| AUA | 58  | Aerodrome Control Zone                              |
| AUA | 59  | Class C Control Zone                                |
| AUA | 60  | Sparsely Settled Area                               |
| AUA | 62  | ICAO  |
| AUA | 63  | Upper Airspace Centers Operational Air Traffic      |
| AUA | 64  | Controlled Visual Flight Rules (CVFR)               |
| AUA | 65  | Bird Hazard Areas                                   |
| AUA | 66  | Temporary Reserved Airspace (TRA)                   |
| AUA | 67  | Air Route Traffic Control Center Sector or Discrete |
| AUA | 68  | Sub-Flight Information Region (SUB FIR)             |
| AUA | 69  | Radar Area Sector Boundary                          |
| AUA | 70  | Oceanic Control Area (FAA) (CTA)                    |
| AUA | 74  | Refueling/Track Area                                |
| AUA | 75  | Berlin Control Zone                                 |
| AUA | 76  | Helicopter Protection Area                          |
| AUA | 77  | Traffic Information Zone                            |
| AUA | 78  | Low Flying Area                                     |
| AUA | 999 | Other   |

AUB

Airspace Use Boundary Type

AUB -32767 NULL (*Special Use Airspace*)

|     |    |   |
|-----|----|---|
| AUB | 0  | Unknown   |
| AUB | 1  | Flight Information Region (FIR)                 |
| AUB | 3  | CTLZ Control Zone                               |
| AUB | 4  | MATZ Control Zone                               |
| AUB | 5  | SRZ Control Zone                                |
| AUB | 7  | Advisory Area (ADA)                             |
| AUB | 8  | Terminal Control Area (TCA)/Military TCA (MTCA) |
| AUB | 13 | Area Control Center (ACC)                       |
| AUB | 14 | Radar Area                                      |
| AUB | 19 | Upper Information Region (UIR)                  |
| AUB | 23 | Control Area (CTA), UTA, or SRA Control Area    |
| AUB | 29 | Oceanic Control Area (non-FAA) (OCA)            |
| AUB | 30 | Oceanic Control Area (FAA) (OCA)                |
| AUB | 32 | Air Defense Identification Zone (ADIZ)          |
| AUB | 33 | Buffer Zone                                     |
| AUB | 58 | Air Route Traffic Control Center (ARTCC)        |

#### AUL

#### Airspace Use Limitations

|     |     |  |
|-----|-----|--|
| AUL | 0   | Unknown  |
| AUL | 1   | Danger Area                                    |
| AUL | 2   | Prohibited Area                                |
| AUL | 3   | Restricted Area                                |
| AUL | 4   | Prohibited VFR                                 |
| AUL | 5   | Alert Area                                     |
| AUL | 6   | Warning Area                                   |
| AUL | 7   | Defense Area                                   |
| AUL | 8   | Controlled Firing Area                         |
| AUL | 9   | Temporary Reserved Airspace (TRA)              |
| AUL | 10  | Parachute Drop Zone                            |
| AUL | 11  | Hazard to Aircraft                             |
| AUL | 12  | Gas Venting Station                            |
| AUL | 13  | Town to be Avoided                             |
| AUL | 14  | Nature Reserves, Parks, Conservation Areas     |
| AUL | 15  | Helicopter Protection                          |
| AUL | 16  | Air Exercise Area                              |
| AUL | 17  | Area of Intense Air Activity                   |
| AUL | 18  | Bird Sanctuary                                 |
| AUL | 19  | Bird Hazard Area                               |
| AUL | 20  | Industrial Hazards/Object needing protection   |
| AUL | 21  | Health Resorts/Medical Establishments          |
| AUL | 22  | Low Flying Avoidance Area                      |
| AUL | 23  | Mink Farm                                      |
| AUL | 24  | Low Flying Tactical Training Avoidances        |
| AUL | 25  | Low Flying Dedicated User Area                 |
| AUL | 26  | Area of Intensive Microlight/Ultralight Flying |
| AUL | 27  | Provost Marshal                                |
| AUL | 28  | Military Operating Area (MOA)                  |
| AUL | 29  | High Intensity Radio Transmission Area (HIRTA) |
| AUL | 30  | Military Flying Area (MFA)                     |
| AUL | 31  | Operating Area (OPAREA)                        |
| AUL | 32  | Non-free Flying Area                           |
| AUL | 33  | Sparsely Settled Area                          |
| AUL | 34  | Caution Area                                   |
| AUL | 999 | Other  |

|     |   |               |              |                  |                 |
|-----|---|---------------|--------------|------------------|-----------------|
| AUS | Airspace/Facility Operating Times<br>Status of Air Space and any restrictions that are applicable.<br>AUS 0 Actual Value  |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     |   | Text String   | Lexical      |                  | 256             |
| AUT | Name of Controlling Authority   |               |              |                  |                 |
| AV1 | Lowest Airspace Height<br>Height (AGL - above ground level) above surface level to the lowest portion of the feature (used only for Air Information).<br>AV1 0 Actual Value   |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Feet  | Short Integer | 0±32,767     | 1 FT             |                 |
| AV2 | Highest Airspace Height<br>Height (AGL - above ground level) above surface level to the highest portion of the feature (used only for Air Information).<br>AV2 0 Actual Value |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Feet  | Short Integer | 0±32,767     | 1 FT             |                 |
| AZ1 | Minimum Safe Altitude Sector ( <i>the minimum safe altitude, in feet, above MSL which provides a 1000 foot obstacle clearance within the airspace</i> )                       |               |              |                  |                 |
| AZ1 | Low Effective Altitude (Feet) ( <i>measurement, in feet, to specify the lowest vertical limits</i> )  |               |              |                  |                 |
| AZ2 | Upper Effective Altitude (Feet)<br>Measurement to specify highest vertical limits.<br>AZ2 0 Actual Value  |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Feet  | Short Integer | 0±32,767     | 1 FT             |                 |
| BRF | Primary UHF Frequency<br>Broadcast frequency of a communications device.<br>BRF 0 Actual Value  |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Hertz   | Long Integer  |              | 1 HZ             |                 |
| BR2 | Communication Frequency Second Occurrence - Kilohertz<br>The frequency on which a station broadcasts (second occurrence).<br>BR2 0 Actual Value                               |               |              |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     | Hertz   | Long Integer  |              | 1 HZ             |                 |
| COU | Country Code  |               |              |                  |                 |
| CSP | Country/State/Province Code   |               |              |                  |                 |
| ICL | ICAO Airspace Classification  |               |              |                  |                 |
|     | ICL 0   | Unknown       |              |                  |                 |
|     | ICL 1   | Class A       |              |                  |                 |

|     |   |               |                                |                  |                  |  |  |
|-----|---|---------------|--------------------------------|------------------|------------------|--|--|
|     | ICL   | 2             | Class B                        |                  |                  |  |  |
|     | ICL   | 3             | Class C                        |                  |                  |  |  |
|     | ICL   | 4             | Class D                        |                  |                  |  |  |
|     | ICL   | 5             | Class E                        |                  |                  |  |  |
|     | ICL   | 6             | Class F                        |                  |                  |  |  |
|     | ICL   | 7             | Class G                        |                  |                  |  |  |
| IKO | ICAO Code   |               |                                |                  |                  |  |  |
| MAA | Maximum Authorized Altitude   |               |                                |                  |                  |  |  |
|     | The highest altitude in an airway or route at which adequate reception of navigation aid signals is assured.  |               |                                |                  |                  |  |  |
|     | MAA   | 0             | Actual Value                   |                  |                  |  |  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u>  |  |  |
|     |   | Text String   | ASCII Text                     |                  | 256              |  |  |
| MCA | Morse Code for NAVAID Identifier  |               |                                |                  |                  |  |  |
|     | The ASCII (ISO 646) letter that is being emitted by either the Navigation System Types (NST), Sound Signal (SST), Light characteristics (CHA), or electronic beacon type. |               |                                |                  |                  |  |  |
|     | MCA   | 0             | Actual Value                   |                  |                  |  |  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u>  |  |  |
|     |   | Text String   | ASCII Text                     |                  | 80               |  |  |
| NAM | Communications Name   |               |                                |                  |                  |  |  |
|     | Any Identifier or code.   |               |                                |                  |                  |  |  |
|     | NAM   | 0             | Actual Value                   |                  |                  |  |  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Chars</u> |  |  |
|     |   | Text String   | Lexical                        |                  | 80               |  |  |
| NST | Navigation System Types   |               |                                |                  |                  |  |  |
|     | NST   | 0             | Unknown                        |                  |                  |  |  |
|     | NST   | 17            | NDB                            |                  |                  |  |  |
|     | NST   | 18            | NDB/DME                        |                  |                  |  |  |
|     | NST   | 19            | Radio Range                    |                  |                  |  |  |
|     | NST   | 20            | VOR                            |                  |                  |  |  |
|     | NST   | 21            | VOR/DME                        |                  |                  |  |  |
|     | NST   | 22            | VORTAC                         |                  |                  |  |  |
|     | NST   | 23            | TACAN                          |                  |                  |  |  |
|     | NST   | 24            | ILS                            |                  |                  |  |  |
|     | NST   | 25            | ILS/DME                        |                  |                  |  |  |
|     | NST   | 26            | LOCALIZER                      |                  |                  |  |  |
|     | NST   | 27            | LOC/DME                        |                  |                  |  |  |
|     | NST   | 30            | Microwave Landing System (MLS) |                  |                  |  |  |
|     | NST   | 31            | Fan Marker                     |                  |                  |  |  |
|     | NST   | 32            | Bone Marker                    |                  |                  |  |  |
|     | NST   | 34            | GCA                            |                  |                  |  |  |
|     | NST   | 37            | PAR                            |                  |                  |  |  |
|     | NST   | 58            | DME (excluding ILS/DME)        |                  |                  |  |  |
|     | NST   | 999           | Other                          |                  |                  |  |  |
| OPT | Operations Times  |               |                                |                  |                  |  |  |
|     | OPT   | 0             | Unknown                        |                  |                  |  |  |
|     | OPT   | 1             | Daytime (Sunrise/Sunset)       |                  |                  |  |  |

|     |           |     |                             |
|-----|-----------|-----|-----------------------------|
|     | OPT       | 2   | Nighttime                   |
|     | OPT       | 3   | Continuous                  |
|     | OPT       | 4   | Summertime (April-October)  |
|     | OPT       | 5   | Wintertime (November-March) |
|     | OPT       | 999 | Other                       |
| PRD | Procedure |     |                             |
|     | PCD       | 0   | Unknown                     |
|     | PCD       | 1   | STAR                        |
|     | PCD       | 2   | SID                         |
|     | PCD       | 3   | IAP                         |
| UID | Unique ID |     |                             |

### Routes Feature Class

ID

#### F-CODE/DESCRIPTION

GA010 ATS Route Segment/Leg  
GA045 Route (Air)

AAT Assigned ATC (*text*)

ACC Accuracy

ACC 0 Unknown  
ACC 1 Accurate  
ACC 12  $\leq 0.001$  sec  
ACC 13 0.001 - 0.1 sec  
ACC 14 0.1 - 1.0 sec  
ACC 15 1.0 - 10.0 sec  
ACC 16 10.0 - 60.0 sec

AD1 Altitude Description

AD1 0 Unknown  
AD1 1 At or Above al1 (*or r11 in absense of al1*)  
AD1 2 At or Below al1 (*or r11 in absense of al1*)  
AD1 3 Between al1 and al2 (*or r11 and r12 in absense of al1 and al2*)  
AD1 4 At al1 (*or r11 in absense of al1*)  
AD1 5 As Assigned

AD2 Altitude Description

AD2 0 Unknown  
AD1 1 At or Above r21  
AD1 2 At or Below r21  
AD1 3 Between r21 and r22  
AD1 4 At r21  
AD1 5 As Assigned

AD3 Altitude Description

AD1 0 Unknown  
AD1 1 At or Above r31  
AD1 2 At or Below r31

AD1 3 Between r31 and r32  
AD1 4 At r31  
AD1 5 As Assigned

AL1 Altitude #1 (*lowest altitude used with ALD*)

AL2 Altitude #2 (*highest altitude used with ALD*)

ALD Altitude Description

ALD 0 Unknown  
ALD 1 At or Above al1  
ALD 2 At or Below al1  
ALD 3 As assigned  
ALD 4 At al1  
ALD 5 Between al1 and al2  
ALD 6 Recommended Altitude  
ALD 7 At or Above al2  
ALD 8 Glide Slope Alt @ FAF  
ALD 9 Glide Slope Intercept Altitude

ALN Air Route Segments Lengths  
Length, in nautical miles, of individual air route segments.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| ALN          | 0             | Actual Value |                  |                 |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
| NM           | Short Integer | 0+32,767     | 1 NM             |                 |

ALZ Altitude Type

ALZ 0 Unknown  
ALZ 1 Surface  
ALZ 2 Above Ground Level  
ALZ 3 Mean Sea Level  
ALZ 4 Flight Level

APN APN 69/134/135 Setting

APX APX 78 Encode/Decode

ATL ATS Route Level

ATS 0 Unknown  
ATS 1 High & Low Level  
ATS 2 High level Route  
ATS 3 Low level Route  
ATS 4 Night Low Flying  
ATS 999 Other

AWD Air Route Sements Width  
Width of individual air route segments.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| AWD          | 0             | Actual Value |                  |                 |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
| NM           | Short Integer | 0+32,767     | 1 NM             |                 |

BDY Boundary Code

|       |  |                 |           |           |  |
|-------|--|-----------------|-----------|-----------|--|
| BID   | Bi-directional   |                 |           |           |  |
| BID   | 0  | Unknown         |           |           |  |
| BID   | 1  | Bi-Directional  |           |           |  |
| BID   | 2  | Uni-Directional |           |           |  |
| BR2   | Communication Frequency Second Occurrence - Kiloherzt              |                 |           |           |  |
|       | The frequency on which a station broadcasts (second occurrence).   |                 |           |           |  |
| BR2   | 0  | Actual Value    |           |           |  |
| Units | Format   | Range           | Increment | Max Char  |  |
| Hertz | Long Integer   |                 | 1 HZ      |           |  |
| BRF   | Primary UHF Frequency  |                 |           |           |  |
|       | Broadcast frequency of a communications device.                    |                 |           |           |  |
| BRF   | 0  | Actual Value    |           |           |  |
| Units | Format   | Range           | Increment | Max Char  |  |
| Hertz | Long Integer   |                 | 1 HZ      |           |  |
| CH1   | Receiver TACAN Channel   |                 |           |           |  |
| CH2   | Tanker TACAN Channel   |                 |           |           |  |
| CHL   | Channel Number of TACAN  |                 |           |           |  |
| CNE   | Enroute Communication Name   |                 |           |           |  |
| CSP   | Country/State/Province Code  |                 |           |           |  |
| DF1   | Direction of Flow at Point of Entry ( <i>degrees</i> )             |                 |           |           |  |
| DIS   | Distance to Waypoint   |                 |           |           |  |
| EFT   | Effective Times (From-To)  |                 |           |           |  |
| ESA   | Emergency Safe Altitude  |                 |           |           |  |
| FQ1   | Frequency of Localizer (Megahertz)                                 |                 |           |           |  |
| FQ2   | Frequency of Other NAVAID (Megahertz) ( <i>besides localizer</i> ) |                 |           |           |  |
| FQ3   | Enroute Communications Frequency - Kiloherzt                       |                 |           |           |  |
| FQ4   | Enroute Communications Frequency - Kiloherzt                       |                 |           |           |  |
| GSA   | Glide Slope Angle  |                 |           |           |  |
| IKO   | ICAO Code  |                 |           |           |  |
| MAI   | Minimum Altitude - Feet  |                 |           |           |  |
| MAG   | Magnetic Variation   |                 |           |           |  |
| MC1   | Call Letters of Localizer  |                 |           |           |  |
| MC2   | Call Letters of Other NAVAID                                       |                 |           |           |  |
| MGC   | Magnetic Course (tenths of degrees)                                |                 |           |           |  |
| MGI   | Inbound Magnetic Course  |                 |           |           |  |
| MGO   | Outbound Magnetic Course   |                 |           |           |  |
| NA1   | Name of other NAVAID   |                 |           |           |  |
| NAM   | Name of Route  |                 |           |           |  |
|       | Any Identifier or code.  |                 |           |           |  |
| NAM   | 0  | Actual Value    |           |           |  |
| Units | Format   | Range           | Increment | Max Chars |  |
|       | Text String  | Lexical         |           | 80        |  |
| NAP   | Name of ILS Procedure  |                 |           |           |  |
| NST   | Other NAVAID Type  |                 |           |           |  |
| NST   | 0  | Unknown         |           |           |  |
| NST   | 17   | NDB             |           |           |  |
| NST   | 18   | NDB/DME         |           |           |  |
| NST   | 19   | Radio Range     |           |           |  |
| NST   | 20   | VOR             |           |           |  |

|     |  |  |  |
|-----|--|--|--|
|     | NST  | 21   | VOR/DME                                      |
|     | NST  | 22   | VORTAC                                       |
|     | NST  | 23   | TACAN  |
|     | NST  | 24   | ILS  |
|     | NST  | 25   | ILS/DME                                      |
|     | NST  | 26   | LOCALIZER                                    |
|     | NST  | 27   | LOC/DME                                      |
|     | NST  | 30   | Microwave Landing System (MLS)               |
|     | NST  | 31   | Fan Marker                                   |
|     | NST  | 32   | Bone Marker                                  |
|     | NST  | 34   | GCA  |
|     | NST  | 37   | PAR  |
|     | NST  | 58   | DME (excluding ILS/DME)                      |
|     | NST  | 999  | Other  |
| ORA | Originating Activity ( <i>text</i> )                     |  |  |
| PCD | Procedure  |  |  |
|     | PCD  | 0  | Unknown                                      |
|     | PCD  | 1  | STAR   |
|     | PCD  | 2  | SID  |
|     | PCD  | 3  | IAP  |
| R11 | Refueling Altitude 1 (lowest) ( <i>for first leg</i> )   |  |  |
| R21 | Refueling Altitude 1 (lowest) ( <i>for second leg</i> )  |  |  |
| R31 | Refueling Altitude 1 (lowest) ( <i>for third leg</i> )   |  |  |
| R12 | Refueling Altitude 2 (highest) ( <i>for first leg</i> )  |  |  |
| R22 | Refueling Altitude 2 (highest) ( <i>for second leg</i> ) |  |  |
| R32 | Refueling Altitude 2 (highest) ( <i>for third leg</i> )  |  |  |
| RID | Runway Identifier  |  |  |
|     | "UNK"  | Unknown                                      |  |
|     | "19" to "36"   | First 2 characters                           |  |
|     | Blank  | 3rd Char = Single Runway                     |  |
|     | "C"  | 3rd Char = Center                            |  |
|     | "L"  | 3rd Char = Left                              |  |
|     | "R"  | 3rd Char = Right                             |  |
|     | "S"  | 3rd Char = Short Take Off and Landing (STOL) |  |
| RMK | Remarks  |  |  |
| RTN | Route Navigation   |  |  |
|     | RTN  | 0  | Unknown                                      |
|     | RTN  | 1  | UHF/VHF                                      |
|     | RTN  | 2  | LF/MF  |
| SCA | Scheduling Activity ( <i>text</i> )                      |  |  |
| SCD | Scheduling Unit ( <i>text</i> )                          |  |  |
| SQN | Sequence Number  |  |  |
| STS | Status   |  |  |
|     | STS  | 0  | Unknown                                      |
|     | STS  | 1  | ATS Route Open                               |
|     | STS  | 2  | ATS Route Closed                             |
|     | STS  | 3  | ATS Route Restricted                         |
|     | STS  | 4  | ATS Route Seasonal                           |
|     | STS  | 5  | ATS Route Alternate                          |
| TDC | Track Description Code                                   |  |  |
|     | TDC  | 0  | Unknown                                      |
|     | TDC  | 1  | Constant DME Arc to a Fix                    |
|     | TDC  | 2  | Course to an Altitude (Position unspecified) |
|     | TDC  | 3  | Course to a DME Distance                     |



|     |                                       |     |  |
|-----|---------------------------------------|-----|--|
|     | TDC                                   | 4   | Course to a Next Leg Followed by a Course-Oriented Leg (Intercept Point Undefined) |
|     | TDC                                   | 5   | Course to a Fix  |
|     | TDC                                   | 6   | Course to a Radial Termination (Intercept Point Undefined)                         |
|     | TDC                                   | 7   | Computed Track Direct to a Fix   |
|     | TDC                                   | 8   | Direct Intercept Radial  |
|     | TDC                                   | 9   | Course From a Fix to an Altitude   |
|     | TDC                                   | 10  | Course From a Fix to a Distance  |
|     | TDC                                   | 11  | Course From a Fix to a DME Distance  |
|     | TDC                                   | 12  | Course From a Fix to a Manual Termination  |
|     | TDC                                   | 13  | Initial Fix  |
|     | TDC                                   | 14  | Procedure Turn Followed by a Course to a Fix (CF)                                  |
|     | TDC                                   | 15  | Tear Drop Procedure Turn   |
|     | TDC                                   | 16  | Track Between Two Fixes (Great Circle)   |
|     | TDC                                   | 17  | Heading to an Altitude (Position Unspecified)                                      |
|     | TDC                                   | 18  | Heading to a DME Distance  |
|     | TDC                                   | 19  | Heading to a Next Leg (Intercept Point Undefined)                                  |
|     | TDC                                   | 20  | Heading to a Manual Termination  |
|     | TDC                                   | 21  | Heading to a Radial Termination (Intercept Point Undefined)                        |
| TRD | Transition Identifier                 |     |  |
| TRT | Type of Route                         |     |  |
|     | TRT                                   | 0   | Unknown  |
|     | TRT                                   | 1   | Jet  |
|     | TRT                                   | 2   | Oceanic  |
|     | TRT                                   | 3   | ATS  |
|     | TRT                                   | 999 | Other-see remarks  |
| TY2 | Type of Segment for STAR, SID, or IAP |     |  |
|     | TY2                                   | 0   | Unknown  |
|     | TY2                                   | 1   | SID Runway Transition  |
|     | TY2                                   | 2   | SID or SID Common Route  |
|     | TY2                                   | 3   | SID Enroute Transition   |
|     | TY2                                   | 4   | RNAV SID Runway Transition   |
|     | TY2                                   | 5   | RNAV SID or RNAV SID Common Route  |
|     | TY2                                   | 6   | STAR Enroute Transition  |
|     | TY2                                   | 7   | STAR or STAR Common Route  |
|     | TY2                                   | 8   | STAR Runway Transition   |
|     | TY2                                   | 9   | RNAV STAR Enroute Transition   |
|     | TY2                                   | 10  | RNAV STAR or RNAV STAR Common Route  |
|     | TY2                                   | 11  | RNAV STAR Runway Transition  |
|     | TY2                                   | 12  | Profile Descent Enroute Transition   |
|     | TY2                                   | 13  | Profile Descent or Profile Descent Common Route                                    |
|     | TY2                                   | 14  | Profile Descent Runway Transition  |
|     | TY2                                   | 15  | Approach Transition  |
|     | TY2                                   | 16  | ILS Back Course  |
|     | TY2                                   | 17  | VOR DME/VORTAC   |
|     | TY2                                   | 18  | VOR Circling Approach  |
|     | TY2                                   | 19  | NDB Circling Approach  |
|     | TY2                                   | 20  | GPS  |
|     | TY2                                   | 21  | ILS  |
|     | TY2                                   | 22  | ILS Localizer Only - Circling  |
|     | TY2                                   | 23  | ILS Backcourse - Circling  |
|     | TY2                                   | 24  | ILS Localizer Only - No Glide Slope  |
|     | TY2                                   | 25  | Microwave Landing Systems (MLS)  |
|     | TY2                                   | 26  | NDB  |

|     |  |               |  |
|-----|--|---------------|--|
|     | TY2  | 27            | PAR  |
|     | TY2  | 28            | NDB/DME  |
|     | TY2  | 29            | RNAV   |
|     | TY2  | 30            | VOR (Based on VOR,DME or VORTAC)               |
|     | TY2  | 31            | TACAN  |
|     | TY2  | 32            | VOR (no DME)                                   |
|     | TY2  | 33            | ADF (Automatic Direction Finding)              |
|     | TY2  | 34            | LDA (Localizer Type Direction Aid)             |
|     | TY2  | 35            | SDF (Simplified Direction Finding)             |
| UID | Unique ID  |               |  |
| ZV2 | Highest Z-value  |               |  |
|     | Elevation above a given datum to the highest portion of the feature. |               |  |
|     | ZV2  | 0             | Actual Value                                   |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u> <u>Increment</u> <u>Max Chars</u> |
|     | Meters   | Short Integer | -400 to 30,000 1 M                             |

# Air Obstructions Feature Class

ID

## F-CODE/DESCRIPTION

GB220 Air Obstruction  
GB221 Miscellaneous Air Obstruction  
GB222 Maximum Elevation Figure

ATN

Aids to Navigation  
Indicates whether a feature is marked or unmarked by an aid to navigation.

ATN 0 Unknown  
ATN 1 Marked  
ATN 2 Unmarked  
ATN 3 Lit  
ATN 4 Unlit  
ATN 999 Other

DMF

Density Measure (feature count)

HGT

Height Above Surface Level  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value  
Units Format Range Increment Max Chars  
Meters Short Integer 0±32,767 1 M

UID

Unique ID

ZV2

Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

ZV2 0 Actual Value  
Units Format Range Increment Max Chars  
Meters Short Integer -400 to 30,000 1 M

## World Area Coverage Feature Class

ID

F-CODE/DESCRIPTION

IE010 Map Sheet Frame

NAM WAC Code Name (*text*)  
Any Identifier or code.

|       |             |              |           |           |  |
|-------|-------------|--------------|-----------|-----------|--|
| NAM   | 0           | Actual Value |           |           |  |
| Units | Format      | Range        | Increment | Max Chars |  |
|       | Text String | Lexical      |           | 80        |  |

## Airport Facilities and Diagrams Feature Class

ID

F-CODE/DESCRIPTION

GA300 Communication Sector

IKO ICAO Code

UID Unique ID

CMT Communication Type

|     |    |  |
|-----|----|--|
| CMT | 0  | Unknown                                      |
| CMT | 1  | ACC - Area Control Center                    |
| CMT | 2  | ACP - Airlift Command Post                   |
| CMT | 3  | APP - Approach Control                       |
| CMT | 4  | ARR - Arrival Control                        |
| CMT | 5  | ATIS - Automatic Terminal Information Center |
| CMT | 6  | AWOS - Automatic Weather Observing Station   |
| CMT | 7  | CLD - Clearance Delivery                     |
| CMT | 8  | DEP - Departure Control                      |
| CMT | 9  | DIR - Director (Radar/Approach Control)      |
| CMT | 10 | EMR - Emergency                              |
| CMT | 11 | FSS - Flight Service Station                 |
| CMT | 12 | GCA - Ground Control Approach                |
| CMT | 13 | GND - Ground Control                         |
| CMT | 14 | GTE - Gate Control                           |
| CMT | 15 | HEL - Helicopter Frequency                   |
| CMT | 16 | INFO - Information                           |
| CMT | 17 | MULT - Multicom                              |
| CMT | 18 | ODP - Parameters (French Radio)              |
| CMT | 19 | OPS - Operations                             |
| CMT | 20 | RDO - Radio                                  |
| CMT | 21 | RDR - Radar Only Frequency                   |
| CMT | 22 | RFSS - Remote Flight Service Station         |
| CMT | 23 | RMP - Ramp Control                           |
| CMT | 24 | ARSA - Airport Radar Service Center          |
| CMT | 25 | TCA - Terminal Control Area                  |
| CMT | 26 | TRSA - Terminal Radar Service                |
| CMT | 27 | TWR - Tower                                  |
| CMT | 28 | UNIC - UNICOM or CTAF/UNICOM                 |

| NAM   | Name<br>Any Identifier or code. |              |           |           |  |
|-------|---------------------------------|--------------|-----------|-----------|--|
| NAM   | 0                               | Actual Value |           |           |  |
| Units | Format                          | Range        | Increment | Max Chars |  |
|       | Text String                     | Lexical      |           | 80        |  |
| FQ1   | Frequency - Kilohertz           |              |           |           |  |
| FQ2   | Frequency - Kilohertz           |              |           |           |  |
| FQ3   | Frequency - Kilohertz           |              |           |           |  |
| FQ4   | Frequency - Kilohertz           |              |           |           |  |
| FQ5   | Frequency - Kilohertz           |              |           |           |  |
| AUS   | Specific Operating Hours        |              |           |           |  |
| RMK   | Remarks ( <i>text</i> )         |              |           |           |  |

## ID

|       |                        |
|-------|------------------------|
| GB010 | Airport Lighting       |
| GB060 | Runway Radar Reflector |

J-137

|     |                   |  |
|-----|-------------------|--|
| RIH | Runway Identifier |  |
|     | "UNK"             | Unknown                                      |
|     | "19" to "36"      | First 2 characters                           |
|     | Blank             | 3rd Char = Single Runway                     |
|     | "C"               | 3rd Char = Center                            |
|     | "L"               | 3rd Char = Left                              |
|     | "R"               | 3rd Char = Right                             |
| UID | "S"               | 3rd Char = Short Take Off and Landing (STOL) |
|     | Unique ID         |  |

#### Non-Runway Parking Facilities Feature Class

ID

##### F-CODE/DESCRIPTION

GB015 Apron/Hardstand  
GB045 Overrun/Stopway  
GB075 Taxiway

EXS

##### Existence Category

EXS 0 Unknown  
EXS 5 Under Construction  
EXS 27 Closed  
EXS 28 Operational

IKO

##### ICAO Code

RST

##### Runway Surface Type

RST 0 Unknown  
RST 1 Hard/Paved  
RST 3 Loose/Light  
RST 5 Grass/Sod (Soft)

SMC

##### Surface Material Category

SMC 0 Unknown  
SMC 5 Asphalt  
SMC 21 Concrete  
SMC 107 Steel  
SMC 999 Other

UID

Unique ID

#### Runways and Related Features Feature Class

ID

##### F-CODE/DESCRIPTION

GB020 Arresting Gear  
GB055 Runway  
GB090 Displacement Threshold (*the designated beginning of the portion of the runway usable for landing. This may be the end of the runway itself and the feature typically exists at each end of the runway.*)  
GB170 INS Alignment Pad (*a designated area where the automated navigation instruments of aircraft are reset before taking-off*)

|     |                         |  |
|-----|-------------------------|--|
| AGC | Arresting Gear Category |  |
|     | AGC 0                   | Unknown                                    |
|     | AGC 1                   | Net  |
|     | AGC 2                   | Cable                                      |
|     | AGC 3                   | Uni-directional (in direction of high end) |
|     | AGC 4                   | Uni-directional (in direction of low end)  |
|     | AGC 5                   | Bi-directional                             |
|     | AGC 6                   | Jet Barrier                                |
|     | AGC 999                 | Other                                      |
| AST | Arresting System Type   |  |
|     | AST 0                   | Unknown                                    |
|     | AST 1                   | AAE 44B-2C                                 |
|     | AST 2                   | AAE 34B-1A                                 |
|     | AST 3                   | AAE 34B-1B                                 |
|     | AST 4                   | AAE 34B-1C                                 |
|     | AST 5                   | AAE 44B-2C/A30                             |
|     | AST 6                   | AAE 340-A3                                 |
|     | AST 7                   | AAE 44B-2D                                 |
|     | AST 8                   | AAE 44B-3H                                 |
|     | AST 9                   | ARZ F40 NET (S-500)                        |
|     | AST 10                  | ARZ F30 NET-SINGLE                         |
|     | AST 11                  | ARZ F30 NET-TWIN                           |
|     | AST 12                  | BAK-6                                      |
|     | AST 13                  | BAK-9                                      |
|     | AST 14                  | BVAK-12                                    |
|     | AST 15                  | BAK-13                                     |
|     | AST 16                  | BAK-14                                     |
|     | AST 17                  | BLISS 500S                                 |
|     | AST 18                  | BEFAB 6:3                                  |
|     | AST 19                  | BEFAB 21:2                                 |
|     | AST 20                  | BEFAB 56:2                                 |
|     | AST 21                  | BEFAB 12:3                                 |
|     | AST 22                  | BEFAB 60:2                                 |
|     | AST 23                  | CHAG                                       |
|     | AST 24                  | E5   |
|     | AST 25                  | E5-1                                       |
|     | AST 26                  | E5-2                                       |
|     | AST 27                  | E5-3                                       |
|     | AST 28                  | E6   |
|     | AST 29                  | E14-1                                      |
|     | AST 30                  | E15  |
|     | AST 31                  | E15-1                                      |
|     | AST 32                  | E16  |
|     | AST 33                  | E27  |
|     | AST 34                  | E27-1                                      |
|     | AST 35                  | E28  |
|     | AST 36                  | JET STOP                                   |
|     | AST 37                  | MA1  |
|     | AST 38                  | MA-1A                                      |
|     | AST 39                  | MA-1A MODIFIED                             |
|     | AST 40                  | M2   |
|     | AST 41                  | M21  |
|     | AST 42                  | PUAG MK-21                                 |

|     |  |               |                    |           |           |
|-----|--|---------------|--------------------|-----------|-----------|
|     | AST  | 43            | RHAG MK-1          |           |           |
|     | AST  | 44            | RAF TYPE A         |           |           |
|     | AST  | 45            | RAF MK-5           |           |           |
|     | AST  | 46            | RAF MK-6           |           |           |
|     | AST  | 47            | RAF MK-12          |           |           |
|     | AST  | 48            | RAF MK-12A         |           |           |
|     | AST  | 49            | RAF TYPE B         |           |           |
|     | AST  | 50            | BEFAB/NET          |           |           |
|     | AST  | 51            | BEFAB 6:3/NET      |           |           |
|     | AST  | 52            | BEFAB 21:3/NET     |           |           |
|     | AST  | 53            | SPRAG MK-1         |           |           |
|     | AST  | 54            | BEFAB 12:3/NET     |           |           |
|     | AST  | 55            | BEFAB 21:2         |           |           |
|     | AST  | 56            | 61QS 11            |           |           |
|     | AST  | 57            | UNKNOWN TYPE CABLE |           |           |
|     | AST  | 58            | UNKNOWN TYPE NET   |           |           |
| DEH | Displacement Threshold Elevation - High End  |               |                    |           |           |
| DEL | Displacement Threshold Elevation - Low End   |               |                    |           |           |
| DTH | Displacement Threshold - High End  |               |                    |           |           |
| DTL | Displacement Threshold - Low End   |               |                    |           |           |
| ELH | Elevation - High End   |               |                    |           |           |
| ELL | Elevation - Low End  |               |                    |           |           |
| EXS | Existence Category   |               |                    |           |           |
|     | EXS  | 0             | Unknown            |           |           |
|     | EXS  | 5             | Under Construction |           |           |
|     | EXS  | 27            | Closed             |           |           |
|     | EXS  | 28            | Operational        |           |           |
| IKO | ICAO Code  |               |                    |           |           |
| LEN | Length (total Length of Runway)  |               |                    |           |           |
|     | A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments. |               |                    |           |           |
|     | LEN  | 0             | Actual Value       |           |           |
|     | Units  | Format        | Range              | Increment | Max Chars |
|     | Meters   | Short Integer | 0±32,767           | 1 M       |           |
| MHH | Magnetic Heading - High End  |               |                    |           |           |
| MHL | Magnetic Heading - Low End   |               |                    |           |           |
| IKO | ICAO Code  |               |                    |           |           |
| PC1 | Type of Pavement   |               |                    |           |           |
|     | PC1  | 0             | Unknown            |           |           |
|     | PC1  | 1             | Rigid              |           |           |
|     | PC1  | 2             | Flexible           |           |           |
| PC2 | Pavement Sub-grade Category  |               |                    |           |           |
|     | PC2  | 0             | Unknown            |           |           |
|     | PC2  | 1             | High               |           |           |
|     | PC2  | 2             | Medium             |           |           |
|     | PC2  | 3             | Low                |           |           |
|     | PC2  | 4             | Ultra Low          |           |           |

|     |   |  |          |           |           |
|-----|---|--|----------|-----------|-----------|
| PC3 | Maximum Tire Pressure   |  |          |           |           |
|     | PC3   | 0 Unknown                                    |          |           |           |
|     | PC3   | 1 High, No Limit                             |          |           |           |
|     | PC3   | 2 Medium (<=217 psi)                         |          |           |           |
|     | PC3   | 3 Low (<=145 psi)                            |          |           |           |
|     | PC3   | 4 Very Low (<=73 psi)                        |          |           |           |
| PC4 | Pavement Evaluation Method  |  |          |           |           |
|     | PC4   | 0 Unknown                                    |          |           |           |
|     | PC4   | 1 Technical Evaluation                       |          |           |           |
|     | PC4   | 2 Experience by Using Aircraft               |          |           |           |
| RIH | Runway Identifier - High End  |  |          |           |           |
|     | "UNK"   | Unknown                                      |          |           |           |
|     | "19" to "36"  | First 2 characters                           |          |           |           |
|     | Blank   | 3rd Char = Single Runway                     |          |           |           |
|     | "C"   | 3rd Char = Center                            |          |           |           |
|     | "L"   | 3rd Char = Left                              |          |           |           |
|     | "R"   | 3rd Char = Right                             |          |           |           |
|     | "S"   | 3rd Char = Short Take Off and Landing (STOL) |          |           |           |
| RIL | Runway Identifier - Low End   |  |          |           |           |
|     | "UNK"   | Unknown                                      |          |           |           |
|     | "01" to "18"  | First 2 characters                           |          |           |           |
|     | Blank   | 3rd Char = Single Runway                     |          |           |           |
|     | "C"   | 3rd Char = Center                            |          |           |           |
|     | "L"   | 3rd Char = Left                              |          |           |           |
|     | "R"   | 3rd Char = Right                             |          |           |           |
|     | "S"   | 3rd Char = Short Take Off and Landing (STOL) |          |           |           |
| RST | Runway Surface Type   |  |          |           |           |
|     | RST   | 0 Unknown                                    |          |           |           |
|     | RST   | 1 Hard/Paved                                 |          |           |           |
|     | RST   | 3 Loose/Light                                |          |           |           |
|     | RST   | 5 Grass/Sod (Soft)                           |          |           |           |
| SLH | Percent Slope - High End  |  |          |           |           |
| SLL | Percent Slope - Low End   |  |          |           |           |
| SMC | Surface Material Category   |  |          |           |           |
|     | SMC   | 0 Unknown                                    |          |           |           |
|     | SMC   | 5 Asphalt                                    |          |           |           |
|     | SMC   | 9 Brick                                      |          |           |           |
|     | SMC   | 20 Composition                               |          |           |           |
|     | SMC   | 21 Concrete                                  |          |           |           |
|     | SMC   | 22 Conglomerate                              |          |           |           |
|     | SMC   | 107 Steel                                    |          |           |           |
|     | SMC   | 999 Other                                    |          |           |           |
| TZH | Touchdown Zone Elevation  |  |          |           |           |
| TZL | Touchdown Zone Elevation - Low End  |  |          |           |           |
| UID | Unique ID   |  |          |           |           |
| WID | Width of Runway (excluding shoulders)   |  |          |           |           |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |  |          |           |           |
|     | WID   | 0 Actual Value                               |          |           |           |
|     | Units   | Format                                       | Range    | Increment | Max Chars |
|     | Meters  | Short Integer                                | 0±32,767 | 1 M       |           |



## Terminal Procedures Feature Class

ID

### F-CODE/DESCRIPTION

|       |   |
|-------|---|
| GA030 | Off Route Radial/Bearing  |
| GA031 | Lead Radial   |
| GA032 | Range Range Feature <i>(two magnetic bearings from two NAVAIDs which cross to generate a route fix)</i> |
| BA1   | Bearing from NAVAID #1  |
| BA2   | Bearing from NAVAID #2  |
| BRG   | Bearing <i>(decimal degrees) (for single)</i>   |
| DIS   | Distance <i>(nautical miles) (for single)</i>   |
| IKO   | ICAO Code   |
| MCA   | Morse Code  |
| NI1   | NAVAID #1 Identifier <i>(4 character code)</i>  |
| NI2   | NAVAID #2 Identifier <i>(4 character code)</i>  |
| NSI   | NAVAID Identifier <i>(4 character code) (for single)</i>  |
| UID   | Unique ID   |

## Navigational Aids Feature Class

ID

### F-CODE/DESCRIPTION

|        |                                     |
|--------|-------------------------------------|
| GA035  | NAVAIDS (Aeronautical)              |
| ACC    | Accuracy                            |
| ACC 0  | Unknown                             |
| ACC 1  | Accurate                            |
| ACC 12 | <= 0.001 sec                        |
| ACC 13 | 0.001 - 0.1 sec                     |
| ACC 14 | 0.1 - 1.0 sec                       |
| ACC 15 | 1.0 - 10.0 sec                      |
| ACC 16 | 10.0 - 60.0 sec                     |
| CHL    | Channel Number                      |
| COU    | Country Code                        |
| EXS    | Existence Category                  |
| EXS 0  | Unknown                             |
| EXS 36 | Commissioned and Operational        |
| EXS 37 | Commissioned & On Test              |
| EXS 38 | Commissioned and Out of Service     |
| EXS 39 | Not Commissioned and Operational    |
| EXS 40 | Not Commissioned and On Test        |
| EXS 41 | Not Commissioned and Out of Service |
| EXS 42 | Continuous Operation                |
| FPA    | Frequency Protection - Altitude     |
| FPD    | Frequency Protection - Distance     |
| FQK    | Frequency (Kilohertz)               |
| FQM    | Frequency (Megahertz)               |
| IKO    | ICAO Code                           |
| MAG    | Magnetic Variation                  |

MCA Morse Code

NAM Name  
Any Identifier or code.

|       |             |              |           |           |
|-------|-------------|--------------|-----------|-----------|
| NAM   | 0           | Actual Value |           |           |
| Units | Format      | Range        | Increment | Max Chars |
|       | Text String | Lexical      |           | 80        |

NST Navigation System Type

|     |    |                         |
|-----|----|-------------------------|
| NST | 0  | Unknown                 |
| NST | 17 | NDB                     |
| NST | 18 | NDB/DME                 |
| NST | 20 | VOR                     |
| NST | 21 | VOR/DME                 |
| NST | 22 | VORTAC                  |
| NST | 23 | TACAN                   |
| NST | 58 | DME (excluding ILS/DME) |

PWR NAVAID Power

RAN Range of Effectiveness

RCC Radio Class Code

|     |   |   |
|-----|---|---|
| RCC | 0 | Unknown   |
| RCC | 1 | Non-directional radio beacon (homing), power 50 to less than 2000 watts   |
| RCC | 2 | Normal anticipated interference-free service, 40NM up to 18,000 feet  |
| RCC | 3 | Normal anticipated interference-free service, 25NM up to 12,000 feet  |
| RCC | 4 | Non-directional radio beacon (homing), power less than 50 watts   |
| RCC | 5 | Non-directional radio beacon (homing), power 2,000 watts or more  |
| RCC | 6 | Normal anticipated interference-free service below 18,000 feet -40NM; 14,500-17,999 feet - 100NM (contiguous 48 states only); 18,000 feet to FL 450 - 130NM; above FL 450 - 100NM |

CSP Country/State/Province Code

SVA Slaved Variation

UID Unique ID

USE Usage Code

|     |    |                        |
|-----|----|------------------------|
| USE | 0  | Unknown                |
| USE | 73 | Terminus/Terminal      |
| USE | 74 | Low Altitude Enroute   |
| USE | 75 | High Altitude Enroute  |
| USE | 76 | Low & High Alt Enroute |
| USE | 85 | Initial Approach Fix   |
| USE | 86 | Final Approach Fix     |
| USE | 91 | NAVAID Changeover      |

ZV2 Highest Z-value

Elevation above a given datum to the highest portion of the feature.

|        |               |                |           |           |
|--------|---------------|----------------|-----------|-----------|
| ZV2    | 0             | Actual Value   |           |           |
| Units  | Format        | Range          | Increment | Max Chars |
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

## ILS Approach Support Feature Class

ID

### F-CODE/DESCRIPTION

GA036 ILS Fix or Marker

COM Component of ILS Procedure

|     |    |                       |
|-----|----|-----------------------|
| COM | 0  | Unknown               |
| COM | 1  | Final Approach Fix    |
| COM | 2  | Inner Marker (IM)     |
| COM | 3  | Middle Marker (MM)    |
| COM | 4  | Outer Marker (OM)     |
| COM | 5  | Back Course Marker    |
| COM | 6  | Visual Descent Point  |
| COM | 7  | Missed Approach Point |
| COM | 8  | End of Runway         |
| COM | 10 | Localizer             |
| COM | 11 | DME                   |

IKO ICAO Code

NAM Name of ILS Procedure

Any Identifier or code.

NAM 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

RID Runway Identification

|              |  |
|--------------|--|
| "UNK"        | Unknown                                      |
| "19" to "36" | First 2 characters                           |
| Blank        | 3rd Char = Single Runway                     |
| "C"          | 3rd Char = Center                            |
| "L"          | 3rd Char = Left                              |
| "R"          | 3rd Char = Right                             |
| "S"          | 3rd Char = Short Take Off and Landing (STOL) |

RMK Remarks

UID Unique ID

## Waypoints Feature Class

ID

### F-CODE/DESCRIPTION

GA055 Waypoint/Reporting-Calling In Point

AL1 Altitude #1 (*lowest altitude used with ALD*)

AL2 Altitude #2 (*highest altitude used with ALD*)

ALD Altitude Description

|     |   |                 |
|-----|---|-----------------|
| ALD | 0 | Unknown         |
| ALD | 1 | At or Above all |
| ALD | 2 | At or Below all |
| ALD | 3 | As assigned     |
| ALD | 4 | At all          |

|     |   |               |   |
|-----|---|---------------|---|
|     | ALD   | 5             | Between al1 and al2                                 |
|     | ALD   | 6             | Recommended Altitude                                |
|     | ALD   | 7             | At or Above al2                                     |
|     | ALD   | 8             | Glide Slope Alt @ FAF                               |
|     | ALD   | 9             | Glide Slope Intercept Altitude                      |
| COU | Country Code  |               |   |
| DF1 | Direction of Traffic (1 <sup>st</sup> Occurrence)                 |               |   |
| HLD | Holding Pattern   |               |   |
|     | HLD   | 0             | Unknown   |
|     | HLD   | 1             | Automatically at the Fix After One Full Circuit     |
|     | HLD   | 2             | Automatically at the Fix After Reaching an Altitude |
|     | HLD   | 3             | Manually  |
| IKO | ICAO Code   |               |   |
| MAG | Magnetic Variation  |               |   |
| MRA | Minimum Reception Altitude (hundreds of feet)                     |               |   |
| MXA | Minimum Crossing Altitude (hundreds of feet)                      |               |   |
| NAM | Name  |               |   |
|     | Any Identifier or code.   |               |   |
|     | NAM   | 0             | Actual Value  |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u> <u>Increment</u> <u>Max Chars</u>      |
|     |   | Text String   | Lexical                80                           |
| NXP | Next Point  |               |   |
| PTN | Point Number  |               |   |
| RMK | Remarks   |               |   |
| CSP | Country/State/Province Code                                       |               |   |
| SQN | Sequence Number   |               |   |
| TRN | Turn Direciton ( <i>direction of turn for a holding pattern</i> ) |               |   |
|     | TRN   | 0             | Unknown   |
|     | TRN   | 1             | Left  |
|     | TRN   | 2             | Right   |
| TY1 | Type of Waypoint  |               |   |
|     | TY1   | 0             | Unknown   |
|     | TY1   | 1             | Runway End Coordinate                               |
|     | TY1   | 3             | MAP   |
|     | TY1   | 4             | FAF   |
|     | TY1   | 5             | IAF   |
|     | TY1   | 6             | Holding Fix   |
|     | TY1   | 7             | Inner Marker  |
|     | TY1   | 8             | Middle Marker                                       |
|     | TY1   | 9             | Outer Marker  |
| UID | Unique ID   |               |   |
| USE | Usage Code  |               |   |
|     | USE   | 0             | Unknown   |
|     | USE   | 73            | Terminus/Terminal                                   |
|     | USE   | 74            | Low Altitude Enroute                                |
|     | USE   | 75            | High Altitude Enroute                               |
|     | USE   | 76            | Low & High Alt Enroute                              |
|     | USE   | 91            | NAVAID Changeover                                   |
|     | USE   | 146           | Exit/End  |

|     |     |                      |
|-----|-----|----------------------|
| USE | 147 | Entry/Starting       |
| USE | 150 | Alternate Entry      |
| USE | 151 | Alternate Exit       |
| USE | 152 | Alternate Entry/Exit |
| USE | 153 | Turning              |

|     |                           |                |
|-----|---------------------------|----------------|
| WPT | Waypoint Description Code |                |
| WPT | 0                         | Unknown        |
| WPT | 17                        | Compulsory     |
| WPT | 18                        | Non-compulsory |

# Approach Support Feature Class

ID

## F-CODE/DESCRIPTION

GA100 Terminal Approach Minima

|     |                               |
|-----|-------------------------------|
| APP | Approach Type ( <i>text</i> ) |
| CAH | Category A HAT/HAA/HAL        |
| CBH | Category B HAT/HAA/HAL        |
| CCH | Category C HAT/HAA/HAL        |
| CDH | Category D HAT/HAA/HAL        |
| CEH | Category E HAT/HAA/HAL        |
| CAW | Category A Weather            |
| CBW | Category B Weather            |
| CCW | Category C Weather            |
| CDW | Category D Weather            |
| CEW | Category E Weather            |
| CVA | Category A Runway Visibility  |
| CVB | Category B Runway Visibility  |
| CVC | Category C Runway Visibility  |
| CVD | Category D Runway Visibility  |
| CVE | Category E Runway Visibility  |
| DHA | Category A Descent Height     |
| DHB | Category B Descent Height     |
| DHC | Category C Descent Height     |
| DHD | Category D Descent Height     |
| DHE | Category E Descent Height     |

|     |           |
|-----|-----------|
| IKO | ICAO Code |
|-----|-----------|

|     |                         |
|-----|-------------------------|
| NAM | Name of Procedure       |
|     | Any Identifier or code. |

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| NAM          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|              | Text String   | Lexical      |                  | 80               |

|     |         |
|-----|---------|
| RMK | Remarks |
|-----|---------|

|     |           |
|-----|-----------|
| UID | Unique ID |
|-----|-----------|

## Transportation Void Collection Area Feature Class

ID

F-CODE/DESCRIPTION

ZD020 Void Collection Area

|     |                               |  |
|-----|-------------------------------|--|
| VCA | Void Collection Attribute     |  |
|     | Reason data is not collected. |  |
| VCA | 0                             | Unknown                                      |
| VCA | 1                             | Data Not Requested By User                   |
| VCA | 2                             | Area Too Rough to Collect                    |
| VCA | 3                             | No Available Imagery                         |
| VCA | 4                             | Different Height Threshold Within Data Block |
| VCA | 5                             | Low Data Collection Criteria                 |
| VCA | 6                             | No Available Map Source                      |
| VCA | 7                             | No Suitable Imagery                          |
| VCA | 8                             | Data Not Required                            |
| VCA | 999                           | Other  |

## Appendix K. Utility Coverage

### Power Generation Feature Class

ID

#### F-CODE/DESCRIPTION

AD010 US Power Plant  
AD020 Solar Panels  
AD030 Substation/Transformer Yard  
AD040 Nuclear Reactor

ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

AOO

#### Angle of Orientation

The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

| Units   | Format        | Range | Increment | Max Chars |
|---------|---------------|-------|-----------|-----------|
| Degrees | Short Integer | 0-360 | 1 DEG     |           |

ARA

#### Area Coverage Attribute

The absolute area within the delineation of the feature.

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

ATN

#### Aids to Navigation

Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

CCC

#### Color Code Category

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |

|     |     |               |
|-----|-----|---------------|
| CCC | 19  | Yellow        |
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|  |     |         |
|--|-----|---------|
| <b>CIC</b> <b>Color Intensity Category</b> |     |         |
| Identifies the intensity of color.         |     |         |
| CIC  | 0   | Unknown |
| CIC  | 1   | Dark    |
| CIC  | 2   | Light   |
| CIC  | 999 | Other   |

|   |     |                                |
|---|-----|--------------------------------|
| <b>COC</b> <b>Conspicuous Category</b>  |     |                                |
| A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |     |                                |
| COC   | 0   | Unknown                        |
| COC   | 1   | Conspicuous from sea           |
| COC   | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC   | 3   | Radar Conspicuous from sea     |
| COC   | 4   | Conspicuous from land          |
| COC   | 5   | Conspicuous from air           |
| COC   | 6   | Inconspicuous                  |
| COC   | 7   | Generally Conspicuous          |
| COC   | 8   | Not visual conspicuous         |
| COC   | 9   | Visual conspicuous             |
| COC   | 10  | Not radar conspicuous          |
| COC   | 999 | Other                          |

|   |               |              |                  |                 |
|---|---------------|--------------|------------------|-----------------|
| <b>DFR</b> <b>Diffuse Reflectance</b>               |               |              |                  |                 |
| Radar backscatter coefficient, expressed as a ratio |               |              |                  |                 |
| <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|   | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

|  |     |         |
|--|-----|---------|
| <b>DY1</b> <b>Directivity</b>  |     |         |
| Indicator of shape of the planar response curve of a feature or model to a sensor (visual response). |     |         |
| DY1  | 0   | Unknown |
| DY1  | 1   | Uni     |
| DY1  | 2   | Bi      |
| DY1  | 3   | Omni    |
| DY1  | 999 | Other   |



*DY2 Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

*DY3 Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |
| EXS | 12 | Alternate          |
| EXS | 18 | Permanent          |
| EXS | 25 | Not Maintained     |
| EXS | 26 | Maintained         |
| EXS | 27 | Closed/Locked      |
| EXS | 28 | Operational        |
| EXS | 30 | Not Isolated       |
| EXS | 31 | Isolated           |
| EXS | 33 | Ruined             |
| EXS | 35 | Other              |
| EXS | 44 | Approximate/About  |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

**FOT** *Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

**HGT** *Height Above Surface Level*

Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

HGT 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**GRS** *Gray Scale value*

A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.

(May be helpful for IR and NVG simulations; TBD)

GRS 0-255

**IMC** *Internal Material Category*

Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

**LEN** *Length/Diameter of Point Feature*

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

**LLE** *Low Level Effects*

Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T  
LLE F

LLL *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

LN1 *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2 *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3 *Layer Number (Radar)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

NAM *Name*  
Any Identifier or code.  
NAM 0 Actual Value  

| Units       | Format  | Range | Increment | Max Chars |
|-------------|---------|-------|-----------|-----------|
| Text String | Lexical |       |           | 80        |

OIT *Object Illumination Type*  
Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
Applies to area features.  
OIT 1 SELF  
OIT 2 SUN  
OIT 3 NOSUN

PPC *Power Plant Category*  
Energy source used to generate power.  
PPC 0 Unknown  
PPC 1 Hydro-electric  
PPC 2 Nuclear  
PPC 3 Solar  
PPC 4 Thermal

|     |     |                     |
|-----|-----|---------------------|
| PPC | 5   | Wind                |
| PPC | 6   | Tidal               |
| PPC | 7   | Internal Combustion |
| PPC | 999 | Other               |

*RFL Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

*SMS Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |
| SMS | 86 | Shells                   |
| SMS | 87 | Shingle                  |
| SMS | 88 | Silt                     |
| SMS | 89 | Silver                   |
| SMS | 90 | Slag                     |
| SMS | 91 | Sludge                   |
| SMS | 92 | Snow/Ice                 |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

*SS1 Sensors Supported*

*SS2*

*SS3*

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*TMR Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

|     |   |               |                |           |           |
|-----|---|---------------|----------------|-----------|-----------|
| TXT | Text Attribute  |               |                |           |           |
|     | Narrative or other description.   |               |                |           |           |
|     | TXT   | 0             | Actual Value   |           |           |
|     | Units   | Format        | Range          | Increment | Max Char  |
|     |   | Text String   | Lexical        |           | 256       |
| WID | Width   |               |                |           |           |
|     | A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN. |               |                |           |           |
|     | WID   | 0             | Actual Value   |           |           |
|     | Units   | Format        | Range          | Increment | Max Chars |
|     | Meters  | Short Integer | 0±32,767       | 1 M       |           |
| ZV2 | Highest Z-value   |               |                |           |           |
|     | Elevation above a given datum to the highest portion of the feature.  |               |                |           |           |
|     | ZV2   | 0             | Actual Value   |           |           |
|     | Units   | Format        | Range          | Increment | Max Chars |
|     | Meters  | Short Integer | -400 to 30,000 | 1 M       |           |

#### Communications/Transmission Feature Class

ID

#### F-CODE/DESCRIPTION

AT005 Cable  
 AT010 US Disk/Dish  
 AT020 Early Warning Radar Site  
 AT030 Power Transmission Line  
 AT040 US Power Transmission Pylon/Line  
 AT041 Telfer  
 AT045 Radar Transmitter  
 AT050 Communication Building  
 AT060 Telephone Line/Telegraph Line  
 AT070 Telephone-Telegraph Pylon/Pole  
 AT080 Communication Tower  
 AT081 Remote Communication Tower

ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC

#### Accuracy Category

Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

**AOO**      **Angle of Orientation**  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|              |   |               |              |                  |                  |
|--------------|---|---------------|--------------|------------------|------------------|
| AOO          | 0 | Actual Value  |              |                  |                  |
| <u>Units</u> |   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Degrees      |   | Short Integer | 0-360        | 1 DEG            |                  |

**ATN**      **Aids to Navigation**  
Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |     |          |
|-----|-----|----------|
| ATN | 0   | Unknown  |
| ATN | 1   | Marked   |
| ATN | 2   | Unmarked |
| ATN | 3   | Lit      |
| ATN | 4   | Unlit    |
| ATN | 999 | Other    |

**BFC**      **Building Function Category**  
Type or purpose of the building.

|     |    |  |
|-----|----|--|
| BFC | 0  | Unknown                                      |
| BFC | 1  | Fabrication Structures                       |
| BFC | 2  | Government Building                          |
| BFC | 3  | Capitol Building                             |
| BFC | 4  | Castle                                       |
| BFC | 5  | Government Administration Building           |
| BFC | 6  | Hospital                                     |
| BFC | 7  | House of Worship                             |
| BFC | 8  | Military Administration /Operations Building |
| BFC | 9  | Museum                                       |
| BFC | 10 | Observatory                                  |
| BFC | 11 | Palace                                       |
| BFC | 12 | Police Station                               |
| BFC | 13 | Prison                                       |
| BFC | 14 | Ranger Station                               |
| BFC | 15 | School                                       |
| BFC | 16 | House  |
| BFC | 17 | Multi Unit Dwelling                          |
| BFC | 18 | Cemetery Building                            |
| BFC | 19 | Farm Building                                |
| BFC | 20 | Greenhouse                                   |
| BFC | 21 | Garage                                       |
| BFC | 22 | Watermill /Gristmill                         |
| BFC | 23 | Wind Tunnel                                  |
| BFC | 24 | Warehouse                                    |
| BFC | 25 | Roundhouse                                   |
| BFC | 26 | Railroad Storage /Repair Facility            |
| BFC | 27 | Depot Terminal                               |
| BFC | 28 | Administration Building                      |
| BFC | 29 | Aircraft Maintenance Shop                    |
| BFC | 30 | Hangar                                       |
| BFC | 31 | Customs House                                |
| BFC | 33 | Health Office                                |
| BFC | 34 | Firing Range                                 |
| BFC | 35 | Post Office                                  |



|     |    |  |
|-----|----|--|
| BFC | 36 | Barracks/Dormitory                             |
| BFC | 37 | Fire Station                                   |
| BFC | 38 | Jail   |
| BFC | 39 | Guardhouse                                     |
| BFC | 40 | Telephone Switching Station                    |
| BFC | 50 | Church   |
| BFC | 51 | Market   |
| BFC | 52 | Town Hall                                      |
| BFC | 53 | Bank   |
| BFC | 54 | Service/Refueling Station                      |
| BFC | 55 | Yacht Club/Sailing Club                        |
| BFC | 56 | Public Inn                                     |
| BFC | 57 | Restaurant                                     |
| BFC | 58 | Observation                                    |
| BFC | 59 | Research and Development Lab/Research Facility |
| BFC | 60 | University/College                             |
| BFC | 61 | Courthouse                                     |
| BFC | 62 | Legation                                       |
| BFC | 63 | Mission  |
| BFC | 64 | Chancery                                       |
| BFC | 65 | Ambassadorial Residence                        |
| BFC | 66 | Embassy  |
| BFC | 67 | Consulate                                      |
| BFC | 68 | Guard House                                    |
| BFC | 69 | Guard Shack/Guard Room                         |
| BFC | 70 | Kennel   |
| BFC | 71 | Oil Mill (Vegetable)                           |
| BFC | 72 | Aerator  |
| BFC | 73 | Carpentry                                      |
| BFC | 74 | Saw-mill                                       |
| BFC | 75 | Kiln/Oven                                      |
| BFC | 76 | Signal Box/Railway Signalman's House           |
| BFC | 77 | Harbor Masters Office                          |
| BFC | 78 | Marine Police                                  |
| BFC | 79 | Rescue   |
| BFC | 80 | Port Control                                   |
| BFC | 81 | Maritime Station                               |
| BFC | 82 | Lighthouse                                     |
| BFC | 83 | Power Generation                               |
| BFC | 84 | Filtration Plant                               |
| BFC | 85 | News Paper Plant                               |
| BFC | 86 | Telephone Exchange (Main)                      |
| BFC | 87 | Auditorium                                     |
| BFC | 88 | Opera House                                    |
| BFC | 89 | Processing/Treatment                           |
| BFC | 90 | Pumphouse                                      |
| BFC | 91 | Mobile Home                                    |
| BFC | 92 | Weather Station                                |
| BFC | 93 | Dependents Housing/Bivouac Area                |
| BFC | 94 | Railroad Station                               |
| BFC | 95 | Hotel  |
| BFC | 96 | Diplomatic Building                            |
| BFC | 97 | Trading Post                                   |
| BFC | 98 | Shed   |

|     |     |                                  |
|-----|-----|----------------------------------|
| BFC | 99  | Battery                          |
| BFC | 100 | Medical Center                   |
| BFC | 101 | Municipal Hall                   |
| BFC | 102 | Oil/Gas Facilities Building      |
| BFC | 103 | Outbuilding                      |
| BFC | 104 | Paper/Pulp Mill                  |
| BFC | 105 | Reformatory                      |
| BFC | 106 | Sanitorium                       |
| BFC | 107 | Satellite Tracking Station       |
| BFC | 108 | Seminary                         |
| BFC | 109 | Senior Citizen's Home            |
| BFC | 110 | Shipyards                        |
| BFC | 111 | Sportsplex                       |
| BFC | 112 | Steel Mill                       |
| BFC | 113 | Weigh Scale (Highway)            |
| BFC | 114 | Non-Christian Place of Worship   |
| BFC | 115 | Hostel                           |
| BFC | 116 | Factory                          |
| BFC | 117 | Motel                            |
| BFC | 118 | Community Center                 |
| BFC | 119 | City Hall                        |
| BFC | 120 | Automobile Plant                 |
| BFC | 121 | Armory                           |
| BFC | 122 | Shopping Center                  |
| BFC | 123 | Correctional Institute           |
| BFC | 124 | Repair Facility                  |
| BFC | 125 | Barn/Machinery Shed              |
| BFC | 126 | Astronomical Station             |
| BFC | 127 | Theater                          |
| BFC | 128 | Library                          |
| BFC | 723 | Combined Fire and Police Station |
| BFC | 999 | Other                            |

BRF Primary UHF Frequency  
Broadcast frequency of a communications device.

|              |   |               |              |                  |                 |
|--------------|---|---------------|--------------|------------------|-----------------|
| BRF          | 0 | Actual Value  |              |                  |                 |
| <u>Units</u> |   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
| Hertz        |   | Long Integer  |              | 1 HZ             |                 |

CAB Cable Classification  
Tabulates the kind of transmission.

|     |   |            |
|-----|---|------------|
| CAB | 1 | Undefined  |
| CAB | 2 | Power Line |
| CAB | 3 | Telephone  |
| CAB | 4 | Telegraph  |

CAP Capacity  
The capacity of a feature. Units will be qualified using a structured text approach, e.g. 100(cars)[per hour] where the unit is in parentheses ( ) and a unit qualifier is in brackets [ ].

|                 |   |               |              |                  |                  |
|-----------------|---|---------------|--------------|------------------|------------------|
| CAP             | 0 | Actual Value  |              |                  |                  |
| <u>Units</u>    |   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Structured Text |   | ASCII Text    |              |                  | 80               |

|     |                     |                        |
|-----|---------------------|------------------------|
| CCC | Color Code Category |                        |
| CCC | 0                   | Unknown/Not applicable |
| CCC | 1                   | Black                  |
| CCC | 2                   | Blue                   |
| CCC | 3                   | Brown                  |
| CCC | 4                   | Gray                   |
| CCC | 5                   | Green                  |
| CCC | 7                   | Chocolate              |
| CCC | 9                   | Orange                 |
| CCC | 12                  | Red                    |
| CCC | 14                  | Violet                 |
| CCC | 15                  | White                  |
| CCC | 19                  | Yellow                 |
| CCC | 47                  | Magenta                |
| CCC | 48                  | Amber                  |
| CCC | 49                  | Buff                   |
| CCC | 51                  | Bluegreen              |
| CCC | 52                  | Bright Blue            |
| CCC | 53                  | Aqua                   |
| CCC | 55                  | Bright Green           |
| CCC | 58                  | Bright Yellow          |
| CCC | 61                  | Bright Red             |
| CCC | 63                  | Cyan                   |
| CCC | 64                  | Purple                 |
| CCC | 69                  | Pink                   |
| CCC | 70                  | Lavender               |
| CCC | 999                 | Other                  |

|     |                                    |         |
|-----|------------------------------------|---------|
| CIC | Color Intensity Category           |         |
|     | Identifies the intensity of color. |         |
| CIC | 0                                  | Unknown |
| CIC | 1                                  | Dark    |
| CIC | 2                                  | Light   |
| CIC | 999                                | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category  |                                |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

COL

Character of Light

Any identifier composed of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR].

COL 0 Actual Value

| Units | Format      | Range   | Increment | Max Chars |
|-------|-------------|---------|-----------|-----------|
|       | Text String | Lexical |           | 80        |

CRC

Shape attributed to the crossing of two or more lines of communication.

CRC 0 Unknown

CRC 1 Junction

CRC 2 Intersection

CRC 3 Star shaped branching (more than 4 roads)

CRC 999 Other

DFR

Diffuse Reflectance

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1

Directivity

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

DY1 0 Unknown

DY1 1 Uni

DY1 2 Bi

DY1 3 Omni

DY1 999 Other

DY2

Directivity (IR)

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

DY2 0 Unknown

DY2 1 Uni

DY2 2 Bi

DY2 3 Omni

DY2 999 Other

DY3

Directivity (Radar)

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

DY3 0 Unknown

DY3 1 Uni

DY3 2 Bi

DY3 3 Omni

DY3 999 Other

EMY

Emissivity

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

The state or condition of the feature.

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 0   | Unknown                 |
| EXS | 1   | Definite                |
| EXS | 2   | Doubtful                |
| EXS | 3   | Reported                |
| EXS | 5   | Under Construction      |
| EXS | 6   | Abandoned/Disused       |
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

FOT

*Feature Onset*

Indicator for changing radar backscatter coefficients.

FOT T

FOT F

|        |  |                |           |           |  |
|--------|--|----------------|-----------|-----------|--|
| GUG    | Guyed or Unguyed Category  |                |           |           |  |
|        | Presence of support wires.   |                |           |           |  |
| GUG    | 0  | Unknown        |           |           |  |
| GUG    | 1  | Guyed          |           |           |  |
| GUG    | 2  | Unguyed        |           |           |  |
| GUG    | 999  | Other          |           |           |  |
| HGT    | Height Above Surface Level   |                |           |           |  |
|        | Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  |                |           |           |  |
| HGT    | 0  | Actual Value   |           |           |  |
| Units  | Format   | Range          | Increment | Max Chars |  |
| Meters | Short Integer  | 0±32,767       | 1 M       |           |  |
| GRS    | Gray Scale value   |                |           |           |  |
|        | A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.  |                |           |           |  |
|        | (May be helpful for IR and NVG simulations; TBD)   |                |           |           |  |
| GRS    | 0-255  |                |           |           |  |
| IMC    | Internal Material Category   |                |           |           |  |
|        | Category code for material internal to an object.  |                |           |           |  |
| Units  | Format   | Range          | Increment | Max Char  |  |
|        | Integer  | 1 .. 32767     |           |           |  |
| LEN    | Length/Diameter of Point Feature   |                |           |           |  |
|        | A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.                     |                |           |           |  |
| LEN    | 0  | Actual Value   |           |           |  |
| Units  | Format   | Range          | Increment | Max Chars |  |
| Meters | Short Integer  | 0±32,767       | 1 M       |           |  |
| LLE    | Low Level Effects  |                |           |           |  |
|        | Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  |                |           |           |  |
| LLE    | T  |                |           |           |  |
| LLE    | F  |                |           |           |  |
| LLL    | Long Lineal  |                |           |           |  |
|        | Reference to a point feature which could potentially look like a long linear feature by radar.   |                |           |           |  |
|        | Applies to point features  |                |           |           |  |
| LLL    | T  |                |           |           |  |
| LLL    | F  |                |           |           |  |
| LN1    | Layer Number   |                |           |           |  |
|        | A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual). |                |           |           |  |
| Units  | Format   | Range          | Increment | Max Char  |  |
|        | Integer  | 0.. 2147483647 |           |           |  |

LN2

*Layer Number (IR)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LOC

*Location Category*

Status of feature relative to surrounding area or water.

|     |    |   |
|-----|----|---|
| LOC | 0  | Unknown   |
| LOC | 1  | Above Surface/Does not Cover (Height Known)       |
| LOC | 2  | Awash at Chart Datum                              |
| LOC | 3  | Dries/Covers (Height Unknown)                     |
| LOC | 4  | Below Surface /Submerged/Underground              |
| LOC | 5  | Covered < 20 Meters                               |
| LOC | 6  | Covered ≥ 20 Meters but < 30 Meters               |
| LOC | 7  | Covered ≥30 Meters                                |
| LOC | 8  | On Ground Surface                                 |
| LOC | 9  | Depth Known                                       |
| LOC | 10 | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11 | Depth Unknown But Safe to Depth Shown             |
| LOC | 12 | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13 | Hull Showing                                      |
| LOC | 14 | Masts Showing                                     |
| LOC | 15 | On Water Surface/Floating                         |
| LOC | 16 | Partially Submerged                               |
| LOC | 17 | Sunken/on sea bottom                              |
| LOC | 19 | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20 | Funnel Showing                                    |
| LOC | 21 | Superstructure showing                            |
| LOC | 22 | Off Shore   |
| LOC | 23 | Below sea bottom                                  |
| LOC | 24 | Suspended or elevated above sea bottom            |
| LOC | 25 | Suspended/Elevation above Ground or Water Surface |
| LOC | 28 | Masts and Funnel Showing                          |
| LOC | 30 | Non-Floating                                      |
| LOC | 31 | Elevated  |
| LOC | 32 | Depressed   |
| LOC | 33 | Not submerged                                     |
| LOC | 34 | Inland  |
| LOC | 35 | Overhead  |
| LOC | 36 | Height Above Bottom                               |
| LOC | 37 | Exact Position Known                              |

|     |     |                        |
|-----|-----|------------------------|
| LOC | 38  | Exact Position Unknown |
| LOC | 39  | Depth Unknown          |
| LOC | 998 | Not applicable         |
| LOC | 999 | Other                  |

NAM      Name  
Any Identifier or code.

|     |              |               |              |                  |                  |
|-----|--------------|---------------|--------------|------------------|------------------|
| NAM | 0            | Actual Value  |              |                  |                  |
|     | <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Text String  | Lexical       |              |                  | 80               |

NST      Navigation System Types

|     |     |                                |
|-----|-----|--------------------------------|
| NST | 0   | Unknown                        |
| NST | 17  | NDB                            |
| NST | 18  | NDB/DME                        |
| NST | 19  | Radio Range                    |
| NST | 20  | VOR                            |
| NST | 21  | VOR/DME                        |
| NST | 22  | VORTAC                         |
| NST | 23  | TACAN                          |
| NST | 24  | ILS                            |
| NST | 25  | ILS/DME                        |
| NST | 26  | LOCALIZER                      |
| NST | 27  | LOC/DME                        |
| NST | 30  | Microwave Landing System (MLS) |
| NST | 31  | Fan Marker                     |
| NST | 32  | Bone Marker                    |
| NST | 34  | GCA                            |
| NST | 37  | PAR                            |
| NST | 58  | DME (excluding ILS/DME)        |
| NST | 999 | Other                          |

OHC      Overhead Clearance Category  
The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)

|     |              |                |              |                  |                  |
|-----|--------------|----------------|--------------|------------------|------------------|
| OHC | 0            | Actual Value   |              |                  |                  |
|     | <u>Units</u> | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Meters       | Floating Point |              | 0.1 M            |                  |

OIT      *Object Illumination Type*  
Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

OWO      Over Water Obstruction  
Indicates the presence of an obstruction over an area of navigable water.

|     |   |  |
|-----|---|--|
| OWO | 1 | Feature crosses navigable water        |
| OWO | 2 | Feature does not cross navigable water |

RFL      *Reflectance*  
Ratio of radiant energy reflected by and object to the amount incident upon it.



| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER*

*Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

*SMS*

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |
| SMS | 86 | Shells                   |
| SMS | 87 | Shingle                  |
| SMS | 88 | Silt                     |
| SMS | 89 | Silver                   |
| SMS | 90 | Slag                     |
| SMS | 91 | Sludge                   |
| SMS | 92 | Snow/Ice                 |
| SMS | 93 | Steel                    |
| SMS | 94 | Stone                    |
| SMS | 95 | Travertin                |
| SMS | 96 | Tufa                     |
| SMS | 97 | Uranium                  |
| SMS | 98 | Volcanic                 |
| SMS | 99 | Volcanic Ash             |

|     |     |                   |
|-----|-----|-------------------|
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*SSC*      *Structure Shape Category*  
Geometric form, appearance, or configuration of the feature.

|     |    |                                |
|-----|----|--------------------------------|
| SSC | 0  | Unknown                        |
| SSC | 1  | Barrel, Ton                    |
| SSC | 2  | Blimp                          |
| SSC | 3  | Boat Hull (Float)              |
| SSC | 4  | Bullet                         |
| SSC | 5  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 6  | Conical /Peaked/NUN            |
| SSC | 7  | Cylindrical (Upright)/CAN      |
| SSC | 9  | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 10 | Pillar, Spindle                |
| SSC | 11 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 12 | Pyramid                        |
| SSC | 13 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 14 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 15 | Solid/filled                   |
| SSC | 16 | Spar                           |
| SSC | 17 | Spherical (Hemispherical)      |
| SSC | 18 | Truss                          |
| SSC | 19 | With Radome                    |
| SSC | 20 | VALUE INTENTIONALLY LEFT BLANK |
| SSC | 21 | Artificial Mountain            |
| SSC | 22 | Crescent                       |
| SSC | 23 | Ferris Wheel                   |
| SSC | 24 | Enclosed                       |
| SSC | 25 | Roller coaster                 |
| SSC | 26 | Lateral                        |
| SSC | 27 | Mounds                         |
| SSC | 28 | Ripple                         |
| SSC | 29 | Star                           |
| SSC | 30 | Transverse                     |
| SSC | 31 | VALUE INTENTIONALLY LEFT BLANK |

|     |     |                                   |
|-----|-----|-----------------------------------|
| SSC | 33  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 34  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 35  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 36  | Windmotor                         |
| SSC | 38  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 40  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 46  | Open                              |
| SSC | 52  | 'A' Frame                         |
| SSC | 53  | 'H' Frame                         |
| SSC | 54  | 'I' Frame                         |
| SSC | 56  | 'Y' Frame                         |
| SSC | 57  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 58  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 59  | Telescoping Gasholder (Gasometer) |
| SSC | 60  | Mast                              |
| SSC | 61  | Tripod                            |
| SSC | 62  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 63  | VALUE INTENTIONALLY LEFT BLANK    |
| SSC | 65  | Cylindrical with flat top         |
| SSC | 66  | Cylindrical with domed top        |
| SSC | 71  | Cylindrical/Peaked                |
| SSC | 73  | Superbuoy                         |
| SSC | 74  | 'T' Frame                         |
| SSC | 75  | Tetrahedron                       |
| SSC | 76  | Funnel                            |
| SSC | 77  | Arch                              |
| SSC | 78  | Multi-Arch                        |
| SSC | 79  | Round                             |
| SSC | 80  | Rectangular                       |
| SSC | 81  | Dragons Teeth                     |
| SSC | 82  | I-Beam                            |
| SSC | 83  | Square                            |
| SSC | 84  | Irregular                         |
| SSC | 85  | Diamond Shaped Buoy               |
| SSC | 86  | Oval                              |
| SSC | 87  | Dome                              |
| SSC | 107 | Tower                             |
| SSC | 108 | Scanner                           |
| SSC | 109 | Obelisk                           |
| SSC | 999 | Other                             |

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

*TRL*

*Translucency*

The degree to which a surface is transparent.

| Type - Real(6 sd) | Range - 0.0 .. 100.0 |              |                  |                 |
|-------------------|----------------------|--------------|------------------|-----------------|
| <u>Units</u>      | <u>Format</u>        | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|                   | Real (f7.3)          | 0.0 .. 100.0 |                  |                 |

|     |   |               |                                |                  |                 |
|-----|---|---------------|--------------------------------|------------------|-----------------|
| TRV | <i>Transmissivity</i>   |               |                                |                  |                 |
|     | Ratio of energy transmitted by an object to the amount of energy incident upon it.  |               |                                |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |   | Real (f7.6)   | 0.0 .. 1.0                     |                  |                 |
| TTP | <i>Texture Type</i>   |               |                                |                  |                 |
|     | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC).  |               |                                |                  |                 |
|     | TTP   | 1             | RGB                            |                  |                 |
|     | TTP   | 2             | GRAY                           |                  |                 |
|     | TTP   | 3             | MULTI                          |                  |                 |
|     | TTP   | 4             | SMFD                           |                  |                 |
| TST | <i>Transmission Line Suspension</i>   |               |                                |                  |                 |
|     | Types of suspension of power transmission lines between pylons.   |               |                                |                  |                 |
|     | TST   | 0             | Unknown                        |                  |                 |
|     | TST   | 1             | Normal Suspension              |                  |                 |
|     | TST   | 2             | Catenary (Over Mountains)      |                  |                 |
|     | TST   | 3             | Catenary (Over Water)          |                  |                 |
| TXT | <i>Text Attribute</i>   |               |                                |                  |                 |
|     | Narrative or other description.   |               |                                |                  |                 |
|     | TXT   | 0             | Actual Value                   |                  |                 |
|     | <u>Units</u>  | <u>Format</u> | <u>Range</u>                   | <u>Increment</u> | <u>Max Char</u> |
|     |   | Text String   | Lexical                        |                  | 256             |
| UNI | <i>Units Category</i>   |               |                                |                  |                 |
|     | Units associated strictly with the measured distance lines (FC100) for nautical data. [Reference DIGEST Part 3 for Units associated with DIGEST header data.] |               |                                |                  |                 |
|     | UNI   | 1             | Meters                         |                  |                 |
|     | UNI   | 11            | Nautical Miles                 |                  |                 |
|     | UNI   | 22            | Feet                           |                  |                 |
|     | UNI   | 23            | Kilometers                     |                  |                 |
|     | UNI   | 24            | Yards                          |                  |                 |
| USE | <i>Usage</i>  |               |                                |                  |                 |
|     | Use (identifies the primary user, function, or controlling authority).  |               |                                |                  |                 |
|     | USE   | 0             | Unknown                        |                  |                 |
|     | USE   | 4             | National                       |                  |                 |
|     | USE   | 5             | State                          |                  |                 |
|     | USE   | 6             | Private                        |                  |                 |
|     | USE   | 7             | Tribal                         |                  |                 |
|     | USE   | 8             | Military                       |                  |                 |
|     | USE   | 10            | Other                          |                  |                 |
|     | USE   | 11            | Motel/Hotel                    |                  |                 |
|     | USE   | 12            | Apartment                      |                  |                 |
|     | USE   | 13            | Open                           |                  |                 |
|     | USE   | 14            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | USE   | 15            | VALUE INTENTIONALLY LEFT BLANK |                  |                 |
|     | USE   | 16            | City                           |                  |                 |
|     | USE   | 17            | Advertising Billboard          |                  |                 |

|     |    |                                    |
|-----|----|------------------------------------|
| USE | 18 | Scoreboard                         |
| USE | 19 | Highway Sign                       |
| USE | 20 | Closed                             |
| USE | 21 | Restricted                         |
| USE | 22 | Joint Military/Civilian            |
| USE | 23 | International                      |
| USE | 24 | Unidentified Aircraft Landing Area |
| USE | 25 | Federal                            |
| USE | 26 | Primary/1st Order                  |
| USE | 30 | Secondary/2nd Order                |
| USE | 31 | Tertiary/3rd Order                 |
| USE | 32 | Insular                            |
| USE | 33 | Provincial                         |
| USE | 37 | Interstate                         |
| USE | 41 | Industrial                         |
| USE | 42 | Commercial                         |
| USE | 43 | Institutional                      |
| USE | 44 | Residential                        |
| USE | 45 | Agricultural                       |
| USE | 48 | Decoy                              |
| USE | 49 | Civilian/Public                    |
| USE | 50 | Limited                            |
| USE | 51 | Telegraph                          |
| USE | 52 | Telephone                          |
| USE | 53 | Power                              |
| USE | 57 | Marine                             |
| USE | 60 | Avalanche                          |
| USE | 61 | Refugee                            |
| USE | 62 | Prisoner                           |
| USE | 68 | Animal sanctuary                   |
| USE | 69 | Levee/Dike                         |
| USE | 70 | Reserve/Reservation                |
| USE | 73 | Terminus/Terminal                  |
| USE | 74 | Low Altitude enroute               |
| USE | 75 | High Altitude Enroute              |
| USE | 76 | Low and High Altitude Enroute      |
| USE | 77 | Short Take-off Landing Approach    |
| USE | 78 | Visual Approach                    |
| USE | 79 | Non-Precision Instrument Approach  |
| USE | 80 | Precision Instrument Approach      |
| USE | 81 | Entry                              |
| USE | 82 | Exit                               |
| USE | 83 | Transaction                        |
| USE | 84 | Feeder                             |
| USE | 85 | Initial Approach Fix               |
| USE | 86 | Final Approach Fix                 |
| USE | 87 | Visual Descent Point               |
| USE | 88 | Missed Approach Point              |
| USE | 89 | Radar                              |
| USE | 90 | Mileage Break Down                 |
| USE | 91 | NAVAID Changeover                  |
| USE | 92 | Altimeter Change                   |
| USE | 93 | Compulsory Reporting Points        |
| USE | 94 | Non-Compulsory Reporting Points    |

|     |     |   |
|-----|-----|---|
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 133 | Single Point Mooring                      |
| USE | 134 | Utilities and Communication               |
| USE | 136 | as a Fill                                 |
| USE | 139 | Fill                                      |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 992 | Drag Strip                                |
| USE | 993 | Filtration Pond                           |
| USE | 994 | Dugout                                    |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 997 | Cable Sign/Pipeline Indicator             |
| USE | 998 | Sea-Plane landing area                    |
| USE | 999 | Other                                     |

#### WID

#### Width

A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|        |               |              |           |           |
|--------|---------------|--------------|-----------|-----------|
| WID    | 0             | Actual Value |           |           |
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

ZV2 Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|        |               |                |           |           |
|--------|---------------|----------------|-----------|-----------|
| ZV2    | 0             | Actual Value   |           |           |
| Units  | Format        | Range          | Increment | Max Chars |
| Meters | Short Integer | -400 to 30,000 | 1 M       |           |

ZV3 Airfield Elevation (Feet)  
The highest point of an airport's usable runways measured in meters from mean sea level.

|        |               |                |           |          |
|--------|---------------|----------------|-----------|----------|
| ZV3    | 0             | Actual Value   |           |          |
| Units  | Format        | Range          | Increment | Max Char |
| Meters | Short Integer | -400 to 30,000 | 1 M       |          |

#### Pipeline Feature Class

ID

F-CODE/DESCRIPTION

AQ113 Pipeline/Pipe  
AQ116 Pumping Station

ABS Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

|       |            |            |           |          |
|-------|------------|------------|-----------|----------|
| Units | Format     | Range      | Increment | Max Char |
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ACC Accuracy Category  
Accuracy of geographic position.

|     |   |             |
|-----|---|-------------|
| ACC | 0 | Unknown     |
| ACC | 1 | Accurate    |
| ACC | 2 | Approximate |
| ACC | 3 | Doubtful    |
| ACC | 5 | Disputed    |
| ACC | 6 | Undisputed  |
| ACC | 7 | Precise     |
| ACC | 8 | Abrogated   |

AOO Angle of Orientation  
The angular distance measured from true north (0 deg) clockwise to the major axis of the feature. If the feature is square, the axis 0 through 89 deg shall be recorded. If the feature is circular, 360 deg shall be recorded.

|         |               |              |           |           |
|---------|---------------|--------------|-----------|-----------|
| AOO     | 0             | Actual Value |           |           |
| Units   | Format        | Range        | Increment | Max Chars |
| Degrees | Short Integer | 0-360        | 1 DEG     |           |

ATN Aids to Navigation  
Indicates whether a feature is marked or unmarked by an aid to navigation.

|     |   |          |
|-----|---|----------|
| ATN | 0 | Unknown  |
| ATN | 1 | Marked   |
| ATN | 2 | Unmarked |



|     |     |       |
|-----|-----|-------|
| ATN | 3   | Lit   |
| ATN | 4   | Unlit |
| ATN | 999 | Other |

CCC      Color Code Category

|     |     |                        |
|-----|-----|------------------------|
| CCC | 0   | Unknown/Not applicable |
| CCC | 1   | Black                  |
| CCC | 2   | Blue                   |
| CCC | 3   | Brown                  |
| CCC | 4   | Gray                   |
| CCC | 5   | Green                  |
| CCC | 7   | Chocolate              |
| CCC | 9   | Orange                 |
| CCC | 12  | Red                    |
| CCC | 14  | Violet                 |
| CCC | 15  | White                  |
| CCC | 19  | Yellow                 |
| CCC | 47  | Magenta                |
| CCC | 48  | Amber                  |
| CCC | 49  | Buff                   |
| CCC | 51  | Bluegreen              |
| CCC | 52  | Bright Blue            |
| CCC | 53  | Aqua                   |
| CCC | 55  | Bright Green           |
| CCC | 58  | Bright Yellow          |
| CCC | 61  | Bright Red             |
| CCC | 63  | Cyan                   |
| CCC | 64  | Purple                 |
| CCC | 69  | Pink                   |
| CCC | 70  | Lavender               |
| CCC | 999 | Other                  |

CIC      Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC      Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |    |                                |
|-----|----|--------------------------------|
| COC | 0  | Unknown                        |
| COC | 1  | Conspicuous from sea           |
| COC | 2  | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3  | Radar Conspicuous from sea     |
| COC | 4  | Conspicuous from land          |
| COC | 5  | Conspicuous from air           |
| COC | 6  | Inconspicuous                  |
| COC | 7  | Generally Conspicuous          |
| COC | 8  | Not visual conspicuous         |
| COC | 9  | Visual conspicuous             |
| COC | 10 | Not radar conspicuous          |

COC 999 Other

DEP

Depth Below Surface Level

Distance measured from the highest point at surface level to the lowest point of the feature below the surface. Recorded values are positive numbers.

DEP 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

DFR

*Diffuse Reflectance*

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DY1

*Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2

*Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3

*Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

|     |  |                         |
|-----|--|-------------------------|
| EXS | Existence Category                     |                         |
|     | The state or condition of the feature. |                         |
| EXS | 0                                      | Unknown                 |
| EXS | 1                                      | Definite                |
| EXS | 2                                      | Doubtful                |
| EXS | 3                                      | Reported                |
| EXS | 5                                      | Under Construction      |
| EXS | 6                                      | Abandoned/Disused       |
| EXS | 7                                      | Destroyed               |
| EXS | 10                                     | Proposed                |
| EXS | 11                                     | Temporary               |
| EXS | 12                                     | Alternate               |
| EXS | 18                                     | Permanent               |
| EXS | 25                                     | Not Maintained          |
| EXS | 26                                     | Maintained              |
| EXS | 27                                     | Closed/Locked           |
| EXS | 28                                     | Operational             |
| EXS | 30                                     | Not Isolated            |
| EXS | 31                                     | Isolated                |
| EXS | 33                                     | Ruined                  |
| EXS | 35                                     | Other                   |
| EXS | 44                                     | Approximate/About       |
| EXS | 45                                     | Natural                 |
| EXS | 46                                     | Man-made                |
| EXS | 47                                     | Swept                   |
| EXS | 48                                     | Controlled              |
| EXS | 49                                     | Non-Controlled          |
| EXS | 50                                     | Non-Tidal               |
| EXS | 51                                     | Tidal/Tidal Fluctuation |
| EXS | 52                                     | Dissipating             |
| EXS | 53                                     | Incomplete              |
| EXS | 54                                     | Antique/Ancient         |
| EXS | 55                                     | Unexamined/Unsurveyed   |
| EXS | 56                                     | Unattended/Unwatched    |
| EXS | 59                                     | Not Usable              |
| EXS | 60                                     | Indefinite (Shoreline)  |
| EXS | 61                                     | Definite Shoreline      |
| EXS | 62                                     | Partially Destroyed     |
| EXS | 65                                     | Inactive                |
| EXS | 998                                    | Not Applicable          |
| EXS | 999                                    | Other                   |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

HGT      Height Above Surface Level  
Distance measured from the lowest point of the base at ground or water level  
(downhill side/downstream side) to the tallest point of the feature.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| HGT          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

GRS

Gray Scale value

A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.  
(May be helpful for IR and NVG simulations; TBD)

GRS 0-255

HSB

Height Above Sea Bottom

Vertical distance from sea bottom to lowest portion of feature.

HSB 0 Actual Value

| Units  | Format         | Range | Increment | Max Char |
|--------|----------------|-------|-----------|----------|
| Meters | Floating Point |       | 0.1 M     |          |

IMC

Internal Material Category

Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

LEN

Length/Diameter of Point Feature

A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

LEN 0 Actual Value

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

LLE

Low Level Effects

Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.

LLE T

LLE F

LLL

Long Lineal

Reference to a point feature which could potentially look like a long linear feature by radar.

Applies to point features

LLL T

LLL F

LN1

Layer Number

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2

Layer Number (IR)

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3

*Layer Number (Radar)*

A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LOC

*Location Category*

Status of feature relative to surrounding area or water.

|     |     |   |
|-----|-----|---|
| LOC | 0   | Unknown   |
| LOC | 1   | Above Surface/Does not Cover (Height Known)       |
| LOC | 2   | Awash at Chart Datum                              |
| LOC | 3   | Dries/Covers (Height Unknown)                     |
| LOC | 4   | Below Surface /Submerged/Underground              |
| LOC | 5   | Covered < 20 Meters                               |
| LOC | 6   | Covered ≥ 20 Meters but < 30 Meters               |
| LOC | 7   | Covered ≥30 Meters                                |
| LOC | 8   | On Ground Surface                                 |
| LOC | 9   | Depth Known                                       |
| LOC | 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11  | Depth Unknown But Safe to Depth Shown             |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13  | Hull Showing                                      |
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

NAM

*Name*

Any Identifier or code.

|     |   |              |
|-----|---|--------------|
| NAM | 0 | Actual Value |
|-----|---|--------------|

|     | Units  | Format         | Range                                  | Increment | Max Chars |
|-----|--|----------------|--|-----------|-----------|
|     | Text String  | Lexical        |  |           | 80        |
| OHC | Overhead Clearance Category  |                |  |           |           |
|     | The least distance between the traveled way and any obstruction vertically above it. (Ref. STANAG 2253)                    |                |  |           |           |
|     | OHC  | 0              | Actual Value                           |           |           |
|     | Units  | Format         | Range                                  | Increment | Max Chars |
|     | Meters   | Floating Point |  | 0.1 M     |           |
| OIT | <i>Object Illumination Type</i>  |                |  |           |           |
|     | Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination) |                |  |           |           |
|     | Applies to area features.  |                |  |           |           |
|     | OIT  | 1              | SELF                                   |           |           |
|     | OIT  | 2              | SUN                                    |           |           |
|     | OIT  | 3              | NOSUN                                  |           |           |
| OWO | Over Water Obstruction   |                |  |           |           |
|     | Indicates the presence of an obstruction over an area of navigable water.  |                |  |           |           |
|     | OWO  | 1              | Feature crosses navigable water        |           |           |
|     | OWO  | 2              | Feature does not cross navigable water |           |           |
| PLT | Pipeline Type  |                |  |           |           |
|     | Identifies function of pipeline.   |                |  |           |           |
|     | PLT  | 0              | Undefined                              |           |           |
|     | PLT  | 1              | Transport                              |           |           |
|     | PLT  | 2              | Outfall                                |           |           |
|     | PLT  | 3              | Intake                                 |           |           |
|     | PLT  | 4              | Sewer                                  |           |           |
|     | PLT  | 5              | Valve                                  |           |           |
|     | PLT  | 6              | Pipeline in general                    |           |           |
| PRO | Product Category   |                |  |           |           |
|     | Principal material involved or product resulting from activity at site.  |                |  |           |           |
|     | PRO  | 0              | Unknown                                |           |           |
|     | PRO  | 5              | Asphalt                                |           |           |
|     | PRO  | 13             | Chemical                               |           |           |
|     | PRO  | 22             | Conglomerate                           |           |           |
|     | PRO  | 26             | Desalinated Water                      |           |           |
|     | PRO  | 30             | Earthen                                |           |           |
|     | PRO  | 31             | Electric                               |           |           |
|     | PRO  | 33             | Explosives                             |           |           |
|     | PRO  | 35             | Food                                   |           |           |
|     | PRO  | 38             | Gas                                    |           |           |
|     | PRO  | 39             | Gasoline                               |           |           |
|     | PRO  | 50             | Heat                                   |           |           |
|     | PRO  | 52             | Lava                                   |           |           |
|     | PRO  | 67             | Oil                                    |           |           |
|     | PRO  | 69             | Ooze                                   |           |           |
|     | PRO  | 82             | Radioactive Material                   |           |           |
|     | PRO  | 102            | Sludge                                 |           |           |
|     | PRO  | 116            | Water                                  |           |           |
|     | PRO  | 128            | Refuse                                 |           |           |

|     |     |                    |
|-----|-----|--------------------|
| PRO | 130 | None               |
| PRO | 132 | Not Applicable     |
| PRO | 133 | Telecommunications |
| PRO | 997 | Not Applicable     |
| PRO | 998 | Multiple           |
| PRO | 999 | Other              |

*RFL Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER Self Emitter*

Indicates that an object has self heating characteristics

SER T

SER F

*SMS Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |

|     |    |                          |
|-----|----|--------------------------|
| SMS | 34 | Conglomerate             |
| SMS | 35 | Copper                   |
| SMS | 36 | Coral                    |
| SMS | 37 | Coral Head               |
| SMS | 38 | Diamonds                 |
| SMS | 39 | Diatoms                  |
| SMS | 40 | Dolomite                 |
| SMS | 41 | Flynch                   |
| SMS | 42 | Foraminifera             |
| SMS | 43 | Fucus                    |
| SMS | 44 | Glass                    |
| SMS | 45 | Globigerina              |
| SMS | 46 | Gold                     |
| SMS | 47 | Granite                  |
| SMS | 48 | INTENTIONALLY LEFT BLANK |
| SMS | 49 | Gravel                   |
| SMS | 50 | Green Rocks              |
| SMS | 51 | Ground (Shells)          |
| SMS | 52 | Iron                     |
| SMS | 53 | Lava                     |
| SMS | 55 | Lead                     |
| SMS | 56 | Loess                    |
| SMS | 57 | Lumber                   |
| SMS | 58 | Macadam                  |
| SMS | 59 | Madrepores               |
| SMS | 60 | Manganese                |
| SMS | 61 | Marble                   |
| SMS | 62 | Marl                     |
| SMS | 63 | Mattes                   |
| SMS | 64 | Mud                      |
| SMS | 65 | Oil                      |
| SMS | 66 | Oil Blister              |
| SMS | 67 | Ooze                     |
| SMS | 70 | Pebbles                  |
| SMS | 71 | Pumice                   |
| SMS | 72 | Quartz                   |
| SMS | 73 | Radiolaria               |
| SMS | 74 | Radioactive Material     |
| SMS | 75 | Reinforced Concrete      |
| SMS | 76 | Rock/Rocky               |
| SMS | 77 | Rubber                   |
| SMS | 78 | Rubble                   |
| SMS | 79 | Salt                     |
| SMS | 80 | Sand                     |
| SMS | 81 | Sandstone                |
| SMS | 82 | Schist                   |
| SMS | 83 | Spoils/Tailings          |
| SMS | 84 | Scoria                   |
| SMS | 85 | Sewage                   |
| SMS | 86 | Shells                   |
| SMS | 87 | Shingle                  |
| SMS | 88 | Silt                     |
| SMS | 89 | Silver                   |
| SMS | 90 | Slag                     |



|     |     |                   |
|-----|-----|-------------------|
| SMS | 91  | Sludge            |
| SMS | 92  | Snow/Ice          |
| SMS | 93  | Steel             |
| SMS | 94  | Stone             |
| SMS | 95  | Travertin         |
| SMS | 96  | Tufa              |
| SMS | 97  | Uranium           |
| SMS | 98  | Volcanic          |
| SMS | 99  | Volcanic Ash      |
| SMS | 100 | Zinc              |
| SMS | 101 | Distorted surface |
| SMS | 102 | Sand and gravel   |
| SMS | 103 | Rip-Rap           |
| SMS | 104 | Kelp              |
| SMS | 105 | Sandwaves         |
| SMS | 500 | Not Evaluated     |
| SMS | 999 | Other             |

*SPC Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

*SS1 Sensors Supported*

SS2

SS3

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*TMR Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

|     |  |                                    |              |           |          |
|-----|--|------------------------------------|--------------|-----------|----------|
| TXT | Text Attribute   |                                    |              |           |          |
|     | Narrative or other description.  |                                    |              |           |          |
|     | TXT  | 0                                  | Actual Value |           |          |
|     | Units  | Format                             | Range        | Increment | Max Char |
|     |  | Text String                        | Lexical      |           | 256      |
| USE | Usage  |                                    |              |           |          |
|     | Use (identifies the primary user, function, or controlling authority). |                                    |              |           |          |
| USE | 0  | Unknown                            |              |           |          |
| USE | 4  | National                           |              |           |          |
| USE | 5  | State                              |              |           |          |
| USE | 6  | Private                            |              |           |          |
| USE | 7  | Tribal                             |              |           |          |
| USE | 8  | Military                           |              |           |          |
| USE | 10   | Other                              |              |           |          |
| USE | 11   | Motel/Hotel                        |              |           |          |
| USE | 12   | Apartment                          |              |           |          |
| USE | 13   | Open                               |              |           |          |
| USE | 14   | VALUE INTENTIONALLY LEFT BLANK     |              |           |          |
| USE | 15   | VALUE INTENTIONALLY LEFT BLANK     |              |           |          |
| USE | 16   | City                               |              |           |          |
| USE | 17   | Advertising Billboard              |              |           |          |
| USE | 18   | Scoreboard                         |              |           |          |
| USE | 19   | Highway Sign                       |              |           |          |
| USE | 20   | Closed                             |              |           |          |
| USE | 21   | Restricted                         |              |           |          |
| USE | 22   | Joint Military/Civilian            |              |           |          |
| USE | 23   | International                      |              |           |          |
| USE | 24   | Unidentified Aircraft Landing Area |              |           |          |
| USE | 25   | Federal                            |              |           |          |
| USE | 26   | Primary/1st Order                  |              |           |          |
| USE | 30   | Secondary/2nd Order                |              |           |          |
| USE | 31   | Tertiary/3rd Order                 |              |           |          |
| USE | 32   | Insular                            |              |           |          |
| USE | 33   | Provincial                         |              |           |          |
| USE | 37   | Interstate                         |              |           |          |
| USE | 41   | Industrial                         |              |           |          |
| USE | 42   | Commercial                         |              |           |          |
| USE | 43   | Institutional                      |              |           |          |
| USE | 44   | Residential                        |              |           |          |
| USE | 45   | Agricultural                       |              |           |          |
| USE | 48   | Decoy                              |              |           |          |
| USE | 49   | Civilian/Public                    |              |           |          |
| USE | 50   | Limited                            |              |           |          |
| USE | 51   | Telegraph                          |              |           |          |
| USE | 52   | Telephone                          |              |           |          |
| USE | 53   | Power                              |              |           |          |
| USE | 57   | Marine                             |              |           |          |
| USE | 60   | Avalanche                          |              |           |          |
| USE | 61   | Refugee                            |              |           |          |
| USE | 62   | Prisoner                           |              |           |          |
| USE | 68   | Animal sanctuary                   |              |           |          |
| USE | 69   | Levee/Dike                         |              |           |          |

|     |     |   |
|-----|-----|---|
| USE | 70  | Reserve/Reservation                       |
| USE | 73  | Terminus/Terminal                         |
| USE | 74  | Low Altitude enroute                      |
| USE | 75  | High Altitude Enroute                     |
| USE | 76  | Low and High Altitude Enroute             |
| USE | 77  | Short Take-off Landing Approach           |
| USE | 78  | Visual Approach                           |
| USE | 79  | Non-Precision Instrument Approach         |
| USE | 80  | Precision Instrument Approach             |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 95  | Alert Apron/Hardstand                     |
| USE | 96  | Operational Apron/Hardstand               |
| USE | 97  | Hanger/Apron                              |
| USE | 98  | Base Flight Apron                         |
| USE | 99  | Engine Test Pad/Apron                     |
| USE | 100 | Transient Apron                           |
| USE | 101 | Depot Apron                               |
| USE | 102 | Stub Apron                                |
| USE | 103 | Dispersal Hardstand                       |
| USE | 104 | Pad Hardstand                             |
| USE | 105 | Refueling Hardstand                       |
| USE | 106 | Parking Hardstand                         |
| USE | 107 | Engine Run-up Hardstand                   |
| USE | 108 | Firing-In Hardstand                       |
| USE | 109 | Compass Rose Hardstand                    |
| USE | 110 | Maintenance Hardstand                     |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 119 | Berthing of vessels                       |
| USE | 120 | Recreational                              |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 127 | as a causeway                             |
| USE | 128 | Mixed Urban or built-up Land              |

|     |     |                               |
|-----|-----|-------------------------------|
| USE | 129 | Military District             |
| USE | 130 | Transportation                |
| USE | 132 | Container                     |
| USE | 133 | Single Point Mooring          |
| USE | 134 | Utilities and Communication   |
| USE | 136 | as a Fill                     |
| USE | 139 | Fill                          |
| USE | 900 | Butts                         |
| USE | 901 | School                        |
| USE | 986 | Military District             |
| USE | 991 | Not Applicable                |
| USE | 992 | Drag Strip                    |
| USE | 993 | Filtration Pond               |
| USE | 994 | Dugout                        |
| USE | 995 | Drinking Water                |
| USE | 996 | Triangulation                 |
| USE | 997 | Cable Sign/Pipeline Indicator |
| USE | 998 | Sea-Plane landing area        |
| USE | 999 | Other                         |

**WID**      Width  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| WID          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

**ZV2**      Highest Z-value  
Elevation above a given datum to the highest portion of the feature.

|              |               |                |                  |                  |
|--------------|---------------|----------------|------------------|------------------|
| ZV2          | 0             | Actual Value   |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | -400 to 30,000 | 1 M              |                  |

#### Utility Void Collection Area Feature Class

**ID**

**F-CODE/DESCRIPTION**

ZD020 Void Collection Area

|            |                               |  |
|------------|-------------------------------|--|
| <b>VCA</b> | Void Collection Attribute     |  |
|            | Reason data is not collected. |  |
| VCA        | 0                             | Unknown                                      |
| VCA        | 1                             | Data Not Requested By User                   |
| VCA        | 2                             | Area Too Rough to Collect                    |
| VCA        | 3                             | No Available Imagery                         |
| VCA        | 4                             | Different Height Threshold Within Data Block |
| VCA        | 5                             | Low Data Collection Criteria                 |
| VCA        | 6                             | No Available Map Source                      |
| VCA        | 7                             | No Suitable Imagery                          |
| VCA        | 8                             | Data Not Required                            |
| VCA        | 999                           | Other  |

## Appendix L. Vegetation Coverage

### Cropland Feature Class

ID

#### F-CODE/DESCRIPTION

EA010 Cropland  
EA020 Hedgerow  
EA030 Nursery  
EA031 Botanical Garden  
EA040 Orchard/Plantation  
EA050 Vineyards  
EA055 Hops  
BH135 Rice field

ABS

#### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

ARA

#### Area Coverage Attribute

The absolute area within the delineation of the feature.

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

BUD

#### Brush/Undergrowth Density Code

Density of brush or undergrowth.

|     |   |                        |
|-----|---|------------------------|
| BUD | 0 | Unknown                |
| BUD | 1 | Open (≤5%)             |
| BUD | 2 | Sparse (>5% and ≤15%)  |
| BUD | 3 | Medium (>15% and ≤50%) |
| BUD | 4 | Dense (>50%)           |
| BUD | 5 | Not Applicable         |

CCC

#### Color Code Category

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |

|     |     |               |
|-----|-----|---------------|
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

CIC Color Intensity Category  
Identifies the intensity of color.

|     |     |         |
|-----|-----|---------|
| CIC | 0   | Unknown |
| CIC | 1   | Dark    |
| CIC | 2   | Light   |
| CIC | 999 | Other   |

COC Conspicuous Category  
A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height.

|     |     |                                |
|-----|-----|--------------------------------|
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999 | Other                          |

DFR *Diffuse Reflectance*  
Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

DMT Density Measure (% of Tree/Canopy Cover)  
Canopy cover measured by percent within area of feature during the summer season.

| DMT     | 0             | Actual Value |           |          |
|---------|---------------|--------------|-----------|----------|
| Units   | Format        | Range        | Increment | Max Char |
| Percent | Short Integer | 0-100        | 1 %       |          |

DYI *Directivity*  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

*DY2*      *Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

*DY3*      *Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY*      *Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI*      *Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS*      *Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |
| EXS | 12 | Alternate          |
| EXS | 18 | Permanent          |
| EXS | 25 | Not Maintained     |
| EXS | 26 | Maintained         |
| EXS | 27 | Closed/Locked      |
| EXS | 28 | Operational        |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

**FEO**      **Feature Element Orientation**  
The angular distance measured from true north (0 deg) clockwise to the predominant linear pattern of the elements within a feature.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| FEO          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Degrees      | Short Integer | 0-359        | 1 DEG            |                  |

**FOT**      *Feature Onset*  
Indicator for changing radar backscatter coefficients.

FOT T  
FOT F

**FTC**      **Farming Type Category**  
Type of field pattern

|     |     |                                    |
|-----|-----|------------------------------------|
| FTC | 0   | Unknown                            |
| FTC | 1   | Slash & Burn-Shifting cultivation  |
| FTC | 2   | Permanent field                    |
| FTC | 3   | Terraced                           |
| FTC | 4   | Ditch Irrigation                   |
| FTC | 5   | Grazing                            |
| FTC | 6   | Regular (planting pattern)         |
| FTC | 7   | Linear (planting pattern)          |
| FTC | 8   | Shifting Cultivation/Crop Rotation |
| FTC | 9   | Not Applicable                     |
| FTC | 98  | Type of field Pattern              |
| FTC | 999 | Other                              |

**HGT**      **Height Above Surface Level**



Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| HGT          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

*GRS*      *Gray Scale value*  
A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.  
(May be helpful for IR and NVG simulations; TBD)  
GRS    0-255

*IMC*      *Internal Material Category*  
Category code for material internal to an object.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 1 .. 32767   |                  |                 |

*LLE*      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

*LLL*      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

*LN1*      *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

*LN2*      *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

*LN3*      *Layer Number (Radar)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

*LOC*      *Location Category*

Status of feature relative to surrounding area or water.

|     |     |   |
|-----|-----|---|
| LOC | 0   | Unknown   |
| LOC | 1   | Above Surface/Does not Cover (Height Known)       |
| LOC | 2   | Awash at Chart Datum                              |
| LOC | 3   | Dries/Covers (Height Unknown)                     |
| LOC | 4   | Below Surface /Submerged/Underground              |
| LOC | 5   | Covered < 20 Meters                               |
| LOC | 6   | Covered ≥ 20 Meters but < 30 Meters               |
| LOC | 7   | Covered ≥30 Meters                                |
| LOC | 8   | On Ground Surface                                 |
| LOC | 9   | Depth Known                                       |
| LOC | 10  | Depth Known ( Cleared by Drag Wire)               |
| LOC | 11  | Depth Unknown But Safe to Depth Shown             |
| LOC | 12  | VALUE INTENTIONALLY LEFT BLANK                    |
| LOC | 13  | Hull Showing                                      |
| LOC | 14  | Masts Showing                                     |
| LOC | 15  | On Water Surface/Floating                         |
| LOC | 16  | Partially Submerged                               |
| LOC | 17  | Sunken/on sea bottom                              |
| LOC | 19  | Above Surface/Does not Cover (Height Unknown)     |
| LOC | 20  | Funnel Showing                                    |
| LOC | 21  | Superstructure showing                            |
| LOC | 22  | Off Shore   |
| LOC | 23  | Below sea bottom                                  |
| LOC | 24  | Suspended or elevated above sea bottom            |
| LOC | 25  | Suspended/Elevation above Ground or Water Surface |
| LOC | 28  | Masts and Funnel Showing                          |
| LOC | 30  | Non-Floating                                      |
| LOC | 31  | Elevated  |
| LOC | 32  | Depressed   |
| LOC | 33  | Not submerged                                     |
| LOC | 34  | Inland  |
| LOC | 35  | Overhead  |
| LOC | 36  | Height Above Bottom                               |
| LOC | 37  | Exact Position Known                              |
| LOC | 38  | Exact Position Unknown                            |
| LOC | 39  | Depth Unknown                                     |
| LOC | 998 | Not applicable                                    |
| LOC | 999 | Other   |

NAM

Name

Any Identifier or code.

|     |              |               |              |                  |                  |
|-----|--------------|---------------|--------------|------------------|------------------|
| NAM | 0            | Actual Value  |              |                  |                  |
|     | <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
|     | Text String  | Lexical       |              |                  | 80               |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

**PHT**      **Predominant Height**  
Height of 51% or more of the feature. If not obtainable, then the average height of the feature will be used.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| PHT          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

**PRO**      **Product Category**  
Principal material involved or product resulting from activity at site.

|     |     |                |
|-----|-----|----------------|
| PRO | 0   | Unknown        |
| PRO | 35  | Food           |
| PRO | 130 | None           |
| PRO | 132 | Not Applicable |
| PRO | 997 | Not Applicable |
| PRO | 998 | Multiple       |
| PRO | 999 | Other          |

**RFL**      **Reflectance**  
Ratio of radiant energy reflected by and object to the amount incident upon it.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

**SDS**      **Stem Diameter Size**  
The average diameter of trees in a stand, measured at a height of 1.4 m above the ground.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| SDS          | 0             | Actual Value |                  |                 |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
| Meters       | Short Integer | 0±32,767     | 1 Meter          |                 |

**SER**      **Self Emitter**  
Indicates that an object has self heating characteristics

SER T  
SER F

**SMS**      **Surface Material Subtype**  
Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |  |
|-----|----|--|
| SMS | 0  | Unknown  |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures   |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures      |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture      |
| SMS | 5  | SW Well graded sand or gravelly sands            |
| SMS | 6  | SP Poorly graded sands or gravelly sands         |
| SMS | 7  | SM Silty sands, sand-silt mixture.               |
| SMS | 8  | SC Clayey sands, sand-clay mixtures              |
| SMS | 9  | ML Inorganic silts and very fine sands           |
| SMS | 10 | CL Inorganic clays of low to medium plasticity   |
| SMS | 11 | OL Organic silts and organic silty clays         |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous    |
| SMS | 14 | OH Organic clays of medium to high plasticity    |

|     |    |   |
|-----|----|---|
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynnch   |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |
| SMS | 57 | Lumber  |
| SMS | 58 | Macadam   |
| SMS | 59 | Madrepores  |
| SMS | 60 | Manganese   |
| SMS | 61 | Marble  |
| SMS | 62 | Marl  |
| SMS | 63 | Mattes  |
| SMS | 64 | Mud   |
| SMS | 65 | Oil   |
| SMS | 66 | Oil Blister   |
| SMS | 67 | Ooze  |
| SMS | 70 | Pebbles   |
| SMS | 71 | Pumice  |
| SMS | 72 | Quartz  |

|     |     |                      |
|-----|-----|----------------------|
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

*SPC*

*Specular*

Flag indicating that the object has the quality of being mirror-like.

SPC T

SPC F

*SS1*

*Sensors Supported*

*SS2*

*SS3*

Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)

SS1(SS2,SS3) T

SS1(SS2,SS3) F

*TMR*

*Texture Map Reflectance*

Reflectance value assigned to a texture map

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

TRL

*Translucency*

The degree to which a surface is transparent.

Type - Real(6 sd) Range - 0.0 .. 100.0

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

TRV

*Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

TTP

*Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

TSC

*Tree Spacing Category*

Average distance between adjacent tree centerlines within area of feature.

| TSC    | 0             | Actual Value |           |           |
|--------|---------------|--------------|-----------|-----------|
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

USE

*Usage*

Use (identifies the primary user, function, or controlling authority).

|     |    |                                |
|-----|----|--------------------------------|
| USE | 0  | Unknown                        |
| USE | 4  | National                       |
| USE | 5  | State                          |
| USE | 6  | Private                        |
| USE | 7  | Tribal                         |
| USE | 8  | Military                       |
| USE | 10 | Other                          |
| USE | 11 | Motel/Hotel                    |
| USE | 12 | Apartment                      |
| USE | 13 | Open                           |
| USE | 14 | VALUE INTENTIONALLY LEFT BLANK |
| USE | 15 | VALUE INTENTIONALLY LEFT BLANK |
| USE | 16 | City                           |
| USE | 20 | Closed                         |
| USE | 21 | Restricted                     |
| USE | 22 | Joint Military/Civilian        |
| USE | 23 | International                  |
| USE | 25 | Federal                        |
| USE | 26 | Primary/1st Order              |
| USE | 30 | Secondary/2nd Order            |
| USE | 31 | Tertiary/3rd Order             |
| USE | 32 | Insular                        |
| USE | 33 | Provincial                     |
| USE | 37 | Interstate                     |
| USE | 42 | Commercial                     |

|     |     |   |
|-----|-----|---|
| USE | 43  | Institutional                             |
| USE | 44  | Residential                               |
| USE | 45  | Agricultural                              |
| USE | 48  | Decoy                                     |
| USE | 49  | Civilian/Public                           |
| USE | 50  | Limited                                   |
| USE | 57  | Marine                                    |
| USE | 60  | Avalanche                                 |
| USE | 61  | Refugee                                   |
| USE | 62  | Prisoner                                  |
| USE | 68  | Animal sanctuary                          |
| USE | 69  | Levee/Dike                                |
| USE | 70  | Reserve/Reservation                       |
| USE | 73  | Terminus/Terminal                         |
| USE | 81  | Entry                                     |
| USE | 82  | Exit                                      |
| USE | 83  | Transaction                               |
| USE | 84  | Feeder                                    |
| USE | 85  | Initial Approach Fix                      |
| USE | 86  | Final Approach Fix                        |
| USE | 87  | Visual Descent Point                      |
| USE | 88  | Missed Approach Point                     |
| USE | 89  | Radar                                     |
| USE | 90  | Mileage Break Down                        |
| USE | 91  | NAVAID Changeover                         |
| USE | 92  | Altimeter Change                          |
| USE | 93  | Compulsory Reporting Points               |
| USE | 94  | Non-Compulsory Reporting Points           |
| USE | 111 | Quaternary/4th Order                      |
| USE | 112 | Quinary/5th Order                         |
| USE | 113 | Regional                                  |
| USE | 114 | Communal                                  |
| USE | 117 | Outfall                                   |
| USE | 118 | Intake                                    |
| USE | 121 | Aircraft Facility/airport reference point |
| USE | 122 | Firebreak                                 |
| USE | 123 | Tourist                                   |
| USE | 124 | Irrigation                                |
| USE | 125 | Retaining                                 |
| USE | 128 | Mixed Urban or built-up Land              |
| USE | 129 | Military District                         |
| USE | 130 | Transportation                            |
| USE | 132 | Container                                 |
| USE | 900 | Butts                                     |
| USE | 901 | School                                    |
| USE | 986 | Military District                         |
| USE | 991 | Not Applicable                            |
| USE | 995 | Drinking Water                            |
| USE | 996 | Triangulation                             |
| USE | 999 | Other                                     |

VEG

Vegetation Characteristics  
 Type of plant or plantings.  
 VEG 0 Unknown

|     |     |  |
|-----|-----|--|
| VEG | 1   | Dry Crops  |
| VEG | 2   | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 3   | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 4   | Rice Paddies                                       |
| VEG | 5   | Agriculture with scattered forests or rows of tree |
| VEG | 6   | Cranberry  |
| VEG | 7   | Peat   |
| VEG | 8   | Pasture, meadow, steppe                            |
| VEG | 9   | Grassland with scattered trees                     |
| VEG | 10  | Tropical Grass                                     |
| VEG | 11  | Casuarina  |
| VEG | 12  | Coniferous   |
| VEG | 16  | Nipa Palm  |
| VEG | 17  | Palm   |
| VEG | 18  | Filao  |
| VEG | 19  | Mangrove   |
| VEG | 20  | Grove  |
| VEG | 22  | Wheat  |
| VEG | 23  | Corn   |
| VEG | 24  | Deciduous  |
| VEG | 25  | Evergreen  |
| VEG | 26  | Cork-Oak   |
| VEG | 27  | Fir  |
| VEG | 28  | Beech  |
| VEG | 29  | Eucalyptus   |
| VEG | 30  | Oak  |
| VEG | 31  | Pine   |
| VEG | 32  | Walnut   |
| VEG | 33  | Maple  |
| VEG | 34  | Poplar   |
| VEG | 35  | Olive  |
| VEG | 36  | Chestnut   |
| VEG | 37  | Larch  |
| VEG | 38  | Cypress  |
| VEG | 39  | Peach  |
| VEG | 40  | Apple  |
| VEG | 41  | Carob  |
| VEG | 42  | Almond   |
| VEG | 43  | Citrus   |
| VEG | 44  | Elm  |
| VEG | 45  | Ilex   |
| VEG | 46  | Birch  |
| VEG | 47  | Ash  |
| VEG | 48  | Hazel  |
| VEG | 49  | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 49  | Mixed Deciduous                                    |
| VEG | 50  | Mixed Trees  |
| VEG | 51  | Herb/Shrub   |
| VEG | 52  | Forest Clearing                                    |
| VEG | 53  | Brushland open to medium density                   |
| VEG | 54  | Brushland medium to dense density                  |
| VEG | 55  | With trees   |
| VEG | 56  | Without trees                                      |
| VEG | 999 | Other  |



|     |  |  |                |
|-----|--|--|----------------|
| VRC | Vegetation Roughness Category                            |  |                |
|     | An indexed value indicating the roughness of vegetation. |  |                |
| VRC | 1  | 0.00   | 100% reduction |
| VRC | 2  | 0.05   |                |
| VRC | 3  | 0.10   |                |
| VRC | 4  | 0.15   |                |
| VRC | 5  | 0.20   |                |
| VRC | 6  | 0.25   |                |
| VRC | 7  | 0.30   |                |
| VRC | 8  | 0.35   |                |
| VRC | 9  | 0.40   |                |
| VRC | 10   | 0.45   |                |
| VRC | 11   | 0.50   | 50% reduction. |
| VRC | 12   | 0.55   |                |
| VRC | 13   | 0.60   |                |
| VRC | 14   | 0.65   |                |
| VRC | 15   | 0.70   |                |
| VRC | 16   | 0.75   |                |
| VRC | 17   | 0.80   |                |
| VRC | 18   | 0.85   |                |
| VRC | 19   | 0.90   |                |
| VRC | 20   | 0.95   |                |
| VRC | 21   | 1.00   | 0% reduction.  |
| VRC | 22   | Not evaluated area where development has precluded evaluation of soil. |                |
| VRC | 23   | NA   |                |

|              |  |                |                  |                  |
|--------------|--|----------------|------------------|------------------|
| ZV2          | Highest Z-value  |                |                  |                  |
|              | Elevation above a given datum to the highest portion of the feature. |                |                  |                  |
| ZV2          | 0  | Actual Value   |                  |                  |
| <u>Units</u> | <u>Format</u>  | <u>Range</u>   | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer  | -400 to 30,000 | 1 M              |                  |

#### Rangeland Feature Class

ID

#### F-CODE/DESCRIPTION

- EB010 Grassland - Area composed of uncultured plants which have little or no woody tissue.
- EB015 Grass/Scrub/Brush - Area composed of uncultured plants which may have some woody tissue
- EB020 Scrub/Brush
- EB030 Land Use/Land Cover (Vegetation) - Thematic classification of the predominant vegetation and landuse characteristics of the land surface covers.
- EE000 Miscellaneous Vegetation

ABS

|   |               |              |                  |                 |
|---|---------------|--------------|------------------|-----------------|
| <i>Absorptivity</i>   |               |              |                  |                 |
| Ratio of radiant (thermal) energy to the energy incident upon it. |               |              |                  |                 |
| <u>Units</u>  | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|   | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

|     |   |                                |
|-----|---|--------------------------------|
| CCC | Color Code Category   |                                |
|     | CCC 0   | Unknown/Not applicable         |
|     | CCC 1   | Black                          |
|     | CCC 2   | Blue                           |
|     | CCC 3   | Brown                          |
|     | CCC 4   | Gray                           |
|     | CCC 5   | Green                          |
|     | CCC 7   | Chocolate                      |
|     | CCC 9   | Orange                         |
|     | CCC 12  | Red                            |
|     | CCC 14  | Violet                         |
|     | CCC 15  | White                          |
|     | CCC 19  | Yellow                         |
|     | CCC 47  | Magenta                        |
|     | CCC 48  | Amber                          |
|     | CCC 49  | Buff                           |
|     | CCC 51  | Bluegreen                      |
|     | CCC 52  | Bright Blue                    |
|     | CCC 53  | Aqua                           |
|     | CCC 55  | Bright Green                   |
|     | CCC 58  | Bright Yellow                  |
|     | CCC 61  | Bright Red                     |
|     | CCC 63  | Cyan                           |
|     | CCC 64  | Purple                         |
|     | CCC 69  | Pink                           |
|     | CCC 70  | Lavender                       |
|     | CCC 999   | Other                          |
| CIC | Color Intensity Category  |                                |
|     | Identifies the intensity of color.  |                                |
|     | CIC 0   | Unknown                        |
|     | CIC 1   | Dark                           |
|     | CIC 2   | Light                          |
|     | CIC 999   | Other                          |
| COC | Conspicuous Category  |                                |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
|     | COC 0   | Unknown                        |
|     | COC 1   | Conspicuous from sea           |
|     | COC 2   | VALUE INTENTIONALLY LEFT BLANK |
|     | COC 3   | Radar Conspicuous from sea     |
|     | COC 4   | Conspicuous from land          |
|     | COC 5   | Conspicuous from air           |
|     | COC 6   | Inconspicuous                  |
|     | COC 7   | Generally Conspicuous          |
|     | COC 8   | Not visual conspicuous         |
|     | COC 9   | Visual conspicuous             |
|     | COC 10  | Not radar conspicuous          |
|     | COC 999   | Other                          |
| DFR | Diffuse Reflectance   |                                |
|     | Radar backscatter coefficient, expressed as a ratio   |                                |

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

*DY1 Directivity*  
Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

*DY2 Directivity (IR)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

*DY3 Directivity (Radar)*  
Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

*EMY Emissivity*  
Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*EXI Exitance*  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

*EXS Existence Category*  
The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*FTC*      *Farming Type Category*  
Type of field pattern

|     |     |                                    |
|-----|-----|------------------------------------|
| FTC | 0   | Unknown                            |
| FTC | 1   | Slash & Burn-Shifting cultivation  |
| FTC | 2   | Permanent field                    |
| FTC | 3   | Terraced                           |
| FTC | 4   | Ditch Irrigation                   |
| FTC | 5   | Grazing                            |
| FTC | 6   | Regular (planting pattern)         |
| FTC | 7   | Linear (planting pattern)          |
| FTC | 8   | Shifting Cultivation/Crop Rotation |
| FTC | 9   | Not Applicable                     |
| FTC | 98  | Type of field Pattern              |
| FTC | 999 | Other                              |

*IMC*      *Internal Material Category*  
Category code for material internal to an object.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Integer       | 1 .. 32767   |                  |                 |

*LLE Low Level Effects*  
 Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
 LLE T  
 LLE F

*LLL Long Linear*  
 Reference to a point feature which could potentially look like a long linear feature by radar.  
 Applies to point features  
 LLL T  
 LLL F

*LN1 Layer Number*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|----------------|------------------|-----------------|
|              | Integer       | 0.. 2147483647 |                  |                 |

*LN2 Layer Number (IR)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|----------------|------------------|-----------------|
|              | Integer       | 0.. 2147483647 |                  |                 |

*LN3 Layer Number (Radar)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|----------------|------------------|-----------------|
|              | Integer       | 0.. 2147483647 |                  |                 |

*OIT Object Illumination Type*  
 Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
 Applies to area features.  

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

*RFL Reflectance*  
 Ratio of radiant energy reflected by and object to the amount incident upon it.  

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

*SER Self Emitter*  
 Indicates that an object has self heating characteristics

SER T  
SER F

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |

|     |     |                          |
|-----|-----|--------------------------|
| SMS | 48  | INTENTIONALLY LEFT BLANK |
| SMS | 49  | Gravel                   |
| SMS | 50  | Green Rocks              |
| SMS | 51  | Ground (Shells)          |
| SMS | 52  | Iron                     |
| SMS | 53  | Lava                     |
| SMS | 55  | Lead                     |
| SMS | 56  | Loess                    |
| SMS | 57  | Lumber                   |
| SMS | 58  | Macadam                  |
| SMS | 59  | Madrepores               |
| SMS | 60  | Manganese                |
| SMS | 61  | Marble                   |
| SMS | 62  | Marl                     |
| SMS | 63  | Mattes                   |
| SMS | 64  | Mud                      |
| SMS | 65  | Oil                      |
| SMS | 66  | Oil Blister              |
| SMS | 67  | Ooze                     |
| SMS | 70  | Pebbles                  |
| SMS | 71  | Pumice                   |
| SMS | 72  | Quartz                   |
| SMS | 73  | Radiolaria               |
| SMS | 74  | Radioactive Material     |
| SMS | 75  | Reinforced Concrete      |
| SMS | 76  | Rock/Rocky               |
| SMS | 77  | Rubber                   |
| SMS | 78  | Rubble                   |
| SMS | 79  | Salt                     |
| SMS | 80  | Sand                     |
| SMS | 81  | Sandstone                |
| SMS | 82  | Schist                   |
| SMS | 83  | Spoils/Tailings          |
| SMS | 84  | Scoria                   |
| SMS | 85  | Sewage                   |
| SMS | 86  | Shells                   |
| SMS | 87  | Shingle                  |
| SMS | 88  | Silt                     |
| SMS | 89  | Silver                   |
| SMS | 90  | Slag                     |
| SMS | 91  | Sludge                   |
| SMS | 92  | Snow/Ice                 |
| SMS | 93  | Steel                    |
| SMS | 94  | Stone                    |
| SMS | 95  | Travertin                |
| SMS | 96  | Tufa                     |
| SMS | 97  | Uranium                  |
| SMS | 98  | Volcanic                 |
| SMS | 99  | Volcanic Ash             |
| SMS | 100 | Zinc                     |
| SMS | 101 | Distorted surface        |
| SMS | 102 | Sand and gravel          |
| SMS | 103 | Rip-Rap                  |
| SMS | 104 | Kelp                     |

|     |     |               |
|-----|-----|---------------|
| SMS | 105 | Sandwaves     |
| SMS | 500 | Not Evaluated |
| SMS | 999 | Other         |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*

*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TMR*      *Texture Map Reflectance*

Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*      *Translucency*

The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*      *Transmissivity*

Ratio of energy transmitted by an object to the amount of energy incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP*      *Texture Type*

Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).  
TTP    1      RGB  
TTP    2      GRAY  
TTP    3      MULTI  
TTP    4      SMFD

*VEG*      *Vegetation Characteristics*

Type of plant or plantings.  
VEG    0      Unknown  
VEG    1      Dry Crops  
VEG    2      VALUE INTENTIONALLY LEFT BLANK  
VEG    3      VALUE INTENTIONALLY LEFT BLANK  
VEG    4      Rice Paddies  
VEG    5      Agriculture with scattered forests or rows of tree  
VEG    6      Cranberry  
VEG    7      Peat  
VEG    8      Pasture, meadow, steppe  
VEG    9      Grassland with scattered trees  
VEG    10      Tropical Grass



|     |     |                                   |
|-----|-----|-----------------------------------|
| VEG | 11  | Casuarina                         |
| VEG | 12  | Coniferous                        |
| VEG | 16  | Nipa Palm                         |
| VEG | 17  | Palm                              |
| VEG | 18  | Filao                             |
| VEG | 19  | Mangrove                          |
| VEG | 20  | Grove                             |
| VEG | 22  | Wheat                             |
| VEG | 23  | Corn                              |
| VEG | 24  | Deciduous                         |
| VEG | 25  | Evergreen                         |
| VEG | 26  | Cork-Oak                          |
| VEG | 27  | Fir                               |
| VEG | 28  | Beech                             |
| VEG | 29  | Eucalyptus                        |
| VEG | 30  | Oak                               |
| VEG | 31  | Pine                              |
| VEG | 32  | Walnut                            |
| VEG | 33  | Maple                             |
| VEG | 34  | Poplar                            |
| VEG | 35  | Olive                             |
| VEG | 36  | Chestnut                          |
| VEG | 37  | Larch                             |
| VEG | 38  | Cypress                           |
| VEG | 39  | Peach                             |
| VEG | 40  | Apple                             |
| VEG | 41  | Carob                             |
| VEG | 42  | Almond                            |
| VEG | 43  | Citrus                            |
| VEG | 44  | Elm                               |
| VEG | 45  | Ilex                              |
| VEG | 46  | Birch                             |
| VEG | 47  | Ash                               |
| VEG | 48  | Hazel                             |
| VEG | 49  | VALUE INTENTIONALLY LEFT BLANK    |
| VEG | 49  | Mixed Deciduous                   |
| VEG | 50  | Mixed Trees                       |
| VEG | 51  | Herb/Shrub                        |
| VEG | 52  | Forest Clearing                   |
| VEG | 53  | Brushland open to medium density  |
| VEG | 54  | Brushland medium to dense density |
| VEG | 55  | With trees                        |
| VEG | 56  | Without trees                     |
| VEG | 999 | Other                             |

|     |   |  |                |
|-----|---|--|----------------|
| VRC |   | Vegetation Roughness Category                            |                |
|     |   | An indexed value indicating the roughness of vegetation. |                |
| VRC | 1 | 0.00   | 100% reduction |
| VRC | 2 | 0.05   |                |
| VRC | 3 | 0.10   |                |
| VRC | 4 | 0.15   |                |
| VRC | 5 | 0.20   |                |
| VRC | 6 | 0.25   |                |
| VRC | 7 | 0.30   |                |

|     |    |  |
|-----|----|--|
| VRC | 8  | 0.35   |
| VRC | 9  | 0.40   |
| VRC | 10 | 0.45   |
| VRC | 11 | 0.50 50% reduction.  |
| VRC | 12 | 0.55   |
| VRC | 13 | 0.60   |
| VRC | 14 | 0.65   |
| VRC | 15 | 0.70   |
| VRC | 16 | 0.75   |
| VRC | 17 | 0.80   |
| VRC | 18 | 0.85   |
| VRC | 19 | 0.90   |
| VRC | 20 | 0.95   |
| VRC | 21 | 1.00 0% reduction.   |
| VRC | 22 | Not evaluated area where development has precluded evaluation of soil. |
| VRC | 23 | NA   |

#### Woodland Feature Class

##### ID

##### F-CODE/DESCRIPTION

EC010 Bamboo/Cane - Woody, treelike grass.  
EC015 Forest  
EC020 Oasis  
EC030 Trees  
EC040 Firebreak/Cleared way

##### ABS

##### Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

##### ARA

##### Area Coverage Attribute

The absolute area within the delineation of the feature.

ARA 0 Actual Value

| Units      | Format        | Range    | Increment        | Max Char |
|------------|---------------|----------|------------------|----------|
| Sq. Meters | Short Integer | 0±32,767 | 1 M <sup>2</sup> |          |
| Hectares   | Short Integer | 0±32,767 | 1 HA             |          |

##### CCC

##### Color Code Category

|     |    |                        |
|-----|----|------------------------|
| CCC | 0  | Unknown/Not applicable |
| CCC | 1  | Black                  |
| CCC | 2  | Blue                   |
| CCC | 3  | Brown                  |
| CCC | 4  | Gray                   |
| CCC | 5  | Green                  |
| CCC | 7  | Chocolate              |
| CCC | 9  | Orange                 |
| CCC | 12 | Red                    |
| CCC | 14 | Violet                 |
| CCC | 15 | White                  |
| CCC | 19 | Yellow                 |

|     |     |               |
|-----|-----|---------------|
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|     |  |         |
|-----|--|---------|
| CIC | Color Intensity Category<br>Identifies the intensity of color. |         |
| CIC | 0  | Unknown |
| CIC | 1  | Dark    |
| CIC | 2  | Light   |
| CIC | 999  | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category<br>A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

|     |   |                                |
|-----|---|--------------------------------|
| COD | Certainty of Delineation<br>Indicates knowledge of the feature's limits or information. |                                |
| COD | 0   | Unknown                        |
| COD | 1   | Limits and Information Known   |
| COD | 2   | Limits and Information Unknown |

|     |  |               |              |                  |                 |
|-----|--|---------------|--------------|------------------|-----------------|
| DFR | Diffuse Reflectance<br>Radar backscatter coefficient, expressed as a ratio |               |              |                  |                 |
|     | <u>Units</u>   | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|     |  | Real(f7.6)    | 0.0 .. 1.0   |                  |                 |

|     |   |              |
|-----|---|--------------|
| DMT | Density Measure (% of Tree/Canopy Cover)<br>Canopy cover measured by percent within area of feature during the summer season. |              |
| DMT | 0   | Actual Value |

| Units   | Format        | Range | Increment | Max Char |
|---------|---------------|-------|-----------|----------|
| Percent | Short Integer | 0-100 | 1 %       |          |

DY1

*Directivity*

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

DY2

*Directivity (IR)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

DY3

*Directivity (Radar)*

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

EMY

*Emissivity*

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI

*Exitance*

Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

EXS

*Existence Category*

The state or condition of the feature.

|     |    |                    |
|-----|----|--------------------|
| EXS | 0  | Unknown            |
| EXS | 1  | Definite           |
| EXS | 2  | Doubtful           |
| EXS | 3  | Reported           |
| EXS | 5  | Under Construction |
| EXS | 6  | Abandoned/Disused  |
| EXS | 7  | Destroyed          |
| EXS | 10 | Proposed           |
| EXS | 11 | Temporary          |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

*FOT*      *Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*FTC*      *Farming Type Category*  
Type of field pattern  
FTC 0      Unknown  
FTC 1      Slash & Burn-Shifting cultivation  
FTC 2      Permanent field  
FTC 3      Terraced  
FTC 4      Ditch Irrigation  
FTC 5      Grazing  
FTC 6      Regular (planting pattern)  
FTC 7      Linear (planting pattern)  
FTC .8      Shifting Cultivation/Crop Rotation  
FTC 9      Not Applicable  
FTC 98      Type of field Pattern  
FTC 999      Other

*HGT*      *Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level  
(downhill side/downstream side) to the tallest point of the feature.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| HGT          | 0             | Actual Value |                  |                  |
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

*GRS*      *Gray Scale value*  
A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.  
(May be helpful for IR and NVG simulations; TBD)  
GRS    0-255

*IMC*      *Internal Material Category*  
Category code for material internal to an object.

|              |               |              |                  |                 |
|--------------|---------------|--------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 1 .. 32767   |                  |                 |

*LEN*      *Length/Diameter of Point Feature*  
A measurement of the longer of two linear axes in meters. For a square feature, measure either axis. For a round feature, measure the diameter. For a bridge, the length is the distance between the bridge abutments.

|              |               |              |                  |                  |
|--------------|---------------|--------------|------------------|------------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Chars</u> |
| Meters       | Short Integer | 0±32,767     | 1 M              |                  |

*LLE*      *Low Level Effects*  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

*LLL*      *Long Lineal*  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

*LN1*      *Layer Number*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

*LN2*      *Layer Number (IR)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

|              |               |                |                  |                 |
|--------------|---------------|----------------|------------------|-----------------|
| <u>Units</u> | <u>Format</u> | <u>Range</u>   | <u>Increment</u> | <u>Max Char</u> |
|              | Integer       | 0.. 2147483647 |                  |                 |

*LN3*      *Layer Number (Radar)*  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be

rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

NAM

Name

Any Identifier or code.

|     |   |              |
|-----|---|--------------|
| NAM | 0 | Actual Value |
|-----|---|--------------|

| Units       | Format  | Range | Increment | Max Chars |
|-------------|---------|-------|-----------|-----------|
| Text String | Lexical |       |           | 80        |

OIT

*Object Illumination Type*

Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)

Applies to area features.

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

RFL

*Reflectance*

Ratio of radiant energy reflected by and object to the amount incident upon it.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

SBC

Shelter Belt Condition

Indicates whether a linear stand of trees functions as a shelter belt, protecting roadways, railroads, cropland, construction, etc., from the effects of adverse weather.

|     |   |                                     |
|-----|---|-------------------------------------|
| SBC | 1 | Functions as a shelter belt         |
| SBC | 2 | Does not function as a shelter belt |

SER

*Self Emitter*

Indicates that an object has self heating characteristics

|     |   |
|-----|---|
| SER | T |
| SER | F |

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |  |
|-----|----|--|
| SMS | 0  | Unknown  |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures   |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures      |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture      |
| SMS | 5  | SW Well graded sand or gravelly sands            |
| SMS | 6  | SP Poorly graded sands or gravelly sands         |
| SMS | 7  | SM Silty sands, sand-silt mixture.               |
| SMS | 8  | SC Clayey sands, sand-clay mixtures              |
| SMS | 9  | ML Inorganic silts and very fine sands           |
| SMS | 10 | CL Inorganic clays of low to medium plasticity   |
| SMS | 11 | OL Organic silts and organic silty clays         |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous    |

|     |    |   |
|-----|----|---|
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |
| SMS | 48 | INTENTIONALLY LEFT BLANK                              |
| SMS | 49 | Gravel  |
| SMS | 50 | Green Rocks   |
| SMS | 51 | Ground (Shells)                                       |
| SMS | 52 | Iron  |
| SMS | 53 | Lava  |
| SMS | 55 | Lead  |
| SMS | 56 | Loess   |
| SMS | 57 | Lumber  |
| SMS | 58 | Macadam   |
| SMS | 59 | Madrepores  |
| SMS | 60 | Manganese   |
| SMS | 61 | Marble  |
| SMS | 62 | Marl  |
| SMS | 63 | Mattes  |
| SMS | 64 | Mud   |
| SMS | 65 | Oil   |
| SMS | 66 | Oil Blister   |
| SMS | 67 | Ooze  |
| SMS | 70 | Pebbles   |
| SMS | 71 | Pumice  |



|     |     |                      |
|-----|-----|----------------------|
| SMS | 72  | Quartz               |
| SMS | 73  | Radiolaria           |
| SMS | 74  | Radioactive Material |
| SMS | 75  | Reinforced Concrete  |
| SMS | 76  | Rock/Rocky           |
| SMS | 77  | Rubber               |
| SMS | 78  | Rubble               |
| SMS | 79  | Salt                 |
| SMS | 80  | Sand                 |
| SMS | 81  | Sandstone            |
| SMS | 82  | Schist               |
| SMS | 83  | Spoils/Tailings      |
| SMS | 84  | Scoria               |
| SMS | 85  | Sewage               |
| SMS | 86  | Shells               |
| SMS | 87  | Shingle              |
| SMS | 88  | Silt                 |
| SMS | 89  | Silver               |
| SMS | 90  | Slag                 |
| SMS | 91  | Sludge               |
| SMS | 92  | Snow/Ice             |
| SMS | 93  | Steel                |
| SMS | 94  | Stone                |
| SMS | 95  | Travertin            |
| SMS | 96  | Tufa                 |
| SMS | 97  | Uranium              |
| SMS | 98  | Volcanic             |
| SMS | 99  | Volcanic Ash         |
| SMS | 100 | Zinc                 |
| SMS | 101 | Distorted surface    |
| SMS | 102 | Sand and gravel      |
| SMS | 103 | Rip-Rap              |
| SMS | 104 | Kelp                 |
| SMS | 105 | Sandwaves            |
| SMS | 500 | Not Evaluated        |
| SMS | 999 | Other                |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*STR*      Summer Tree Cover Density Code  
Coded value indicating percent of summer canopy closure within delineated area of feature.  
STR      0      Actual Value

|            |  |  |              |                  |                 |
|------------|--|--|--------------|------------------|-----------------|
|            | <u>Units</u>   | <u>Format</u>                                      | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|            | Percent  | Short Integer                                      | 0-100        | 1 %              |                 |
| <i>TMR</i> | <i>Texture Map Reflectance</i>   |  |              |                  |                 |
|            | Reflectance value assigned to a texture map  |  |              |                  |                 |
|            | <u>Units</u>   | <u>Format</u>                                      | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|            |  | Real (f7.6)  | 0.0 .. 1.0   |                  |                 |
| <i>TRE</i> | <i>Tree Category</i>   |  |              |                  |                 |
|            | Type of tree coverage.   |  |              |                  |                 |
| TRE        | 0  | Unknown  |              |                  |                 |
| TRE        | 1  | Deciduous  |              |                  |                 |
| TRE        | 2  | Evergreen  |              |                  |                 |
| TRE        | 3  | Mixed  |              |                  |                 |
| <i>TRL</i> | <i>Translucency</i>  |  |              |                  |                 |
|            | The degree to which a surface is transparent.  |  |              |                  |                 |
|            | <u>Units</u>   | <u>Format</u>                                      | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|            |  | Real (f7.3)  | 0.0 .. 100.0 |                  |                 |
| <i>TRV</i> | <i>Transmissivity</i>  |  |              |                  |                 |
|            | Ratio of energy transmitted by an object to the amount of energy incident upon it.     |  |              |                  |                 |
|            | <u>Units</u>   | <u>Format</u>                                      | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|            |  | Real (f7.6)  | 0.0 .. 1.0   |                  |                 |
| <i>TTP</i> | <i>Texture Type</i>  |  |              |                  |                 |
|            | Type of data contained within a texture map (RGB, intensity, multi spectral, SMC_FDC). |  |              |                  |                 |
| TTP        | 1  | RGB  |              |                  |                 |
| TTP        | 2  | GRAY   |              |                  |                 |
| TTP        | 3  | MULTI  |              |                  |                 |
| TTP        | 4  | SMFD   |              |                  |                 |
| <i>TSC</i> | <i>Tree Spacing Category</i>   |  |              |                  |                 |
|            | Average distance between adjacent tree centerlines within area of feature.             |  |              |                  |                 |
| TSC        | 0  | Actual Value                                       |              |                  |                 |
|            | <u>Units</u>   | <u>Format</u>                                      | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|            | Meters   | Short Integer                                      | 0±32,767     | 1 M              |                 |
| <i>VEG</i> | <i>Vegetation Characteristics</i>  |  |              |                  |                 |
|            | Type of plant or plantings.  |  |              |                  |                 |
| VEG        | 0  | Unknown  |              |                  |                 |
| VEG        | 1  | Dry Crops  |              |                  |                 |
| VEG        | 2  | VALUE INTENTIONALLY LEFT BLANK                     |              |                  |                 |
| VEG        | 3  | VALUE INTENTIONALLY LEFT BLANK                     |              |                  |                 |
| VEG        | 4  | Rice Paddies                                       |              |                  |                 |
| VEG        | 5  | Agriculture with scattered forests or rows of tree |              |                  |                 |
| VEG        | 6  | Cranberry  |              |                  |                 |
| VEG        | 7  | Peat   |              |                  |                 |
| VEG        | 8  | Pasture, meadow, steppe                            |              |                  |                 |
| VEG        | 9  | Grassland with scattered trees                     |              |                  |                 |
| VEG        | 10   | Tropical Grass                                     |              |                  |                 |
| VEG        | 11   | Casuarina  |              |                  |                 |

|     |     |                                   |
|-----|-----|-----------------------------------|
| VEG | 12  | Coniferous                        |
| VEG | 16  | Nipa Palm                         |
| VEG | 17  | Palm                              |
| VEG | 18  | Filao                             |
| VEG | 19  | Mangrove                          |
| VEG | 20  | Grove                             |
| VEG | 22  | Wheat                             |
| VEG | 23  | Corn                              |
| VEG | 24  | Deciduous                         |
| VEG | 25  | Evergreen                         |
| VEG | 26  | Cork-Oak                          |
| VEG | 27  | Fir                               |
| VEG | 28  | Beech                             |
| VEG | 29  | Eucalyptus                        |
| VEG | 30  | Oak                               |
| VEG | 31  | Pine                              |
| VEG | 32  | Walnut                            |
| VEG | 33  | Maple                             |
| VEG | 34  | Poplar                            |
| VEG | 35  | Olive                             |
| VEG | 36  | Chestnut                          |
| VEG | 37  | Larch                             |
| VEG | 38  | Cypress                           |
| VEG | 39  | Peach                             |
| VEG | 40  | Apple                             |
| VEG | 41  | Carob                             |
| VEG | 42  | Almond                            |
| VEG | 43  | Citrus                            |
| VEG | 44  | Elm                               |
| VEG | 45  | Ilex                              |
| VEG | 46  | Birch                             |
| VEG | 47  | Ash                               |
| VEG | 48  | Hazel                             |
| VEG | 49  | VALUE INTENTIONALLY LEFT BLANK    |
| VEG | 49  | Mixed Deciduous                   |
| VEG | 50  | Mixed Trees                       |
| VEG | 51  | Herb/Shrub                        |
| VEG | 52  | Forest Clearing                   |
| VEG | 53  | Brushland open to medium density  |
| VEG | 54  | Brushland medium to dense density |
| VEG | 55  | With trees                        |
| VEG | 56  | Without trees                     |
| VEG | 999 | Other                             |

#### VRC

#### Vegetation Roughness Category

An indexed value indicating the roughness of vegetation.

|     |   |                     |
|-----|---|---------------------|
| VRC | 1 | 0.00 100% reduction |
| VRC | 2 | 0.05                |
| VRC | 3 | 0.10                |
| VRC | 4 | 0.15                |
| VRC | 5 | 0.20                |
| VRC | 6 | 0.25                |
| VRC | 7 | 0.30                |
| VRC | 8 | 0.35                |

|     |    |  |
|-----|----|--|
| VRC | 9  | 0.40   |
| VRC | 10 | 0.45   |
| VRC | 11 | 0.50 50% reduction.  |
| VRC | 12 | 0.55   |
| VRC | 13 | 0.60   |
| VRC | 14 | 0.65   |
| VRC | 15 | 0.70   |
| VRC | 16 | 0.75   |
| VRC | 17 | 0.80   |
| VRC | 18 | 0.85   |
| VRC | 19 | 0.90   |
| VRC | 20 | 0.95   |
| VRC | 21 | 1.00 0% reduction.   |
| VRC | 22 | Not evaluated area where development has precluded evaluation of soil. |
| VRC | 23 | NA   |

**WID**      **Width**  
A measurement of the shorter of two linear axes. For a square feature, measure either axis. For a round feature, width shall be equal to LEN.

| WID    | 0             | Actual Value |           |           |
|--------|---------------|--------------|-----------|-----------|
| Units  | Format        | Range        | Increment | Max Chars |
| Meters | Short Integer | 0±32,767     | 1 M       |           |

**WTR**      **Winter Tree Cover Density Code**  
Coded value indicating percent of winter canopy closure within delineated area of feature.

|     |   |               |
|-----|---|---------------|
| WTR | 1 | ≤ 25          |
| WTR | 2 | > 25 and ≤ 50 |
| WTR | 3 | > 50 and ≤ 75 |
| WTR | 4 | > 75          |
| WTR | 5 | NA            |

# Swamp/Wetlands Area Feature Table

**ID**

**F-CODE/DESCRIPTION**

BH015 Bog  
BH095 Marsh/Swamp  
ED\_\_ Wetlands

**ABS**      **Absorptivity**  
Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

**CCC**      **Color Code Category**

|     |   |                        |
|-----|---|------------------------|
| CCC | 0 | Unknown/Not applicable |
| CCC | 1 | Black                  |
| CCC | 2 | Blue                   |
| CCC | 3 | Brown                  |
| CCC | 4 | Gray                   |

|     |     |               |
|-----|-----|---------------|
| CCC | 5   | Green         |
| CCC | 7   | Chocolate     |
| CCC | 9   | Orange        |
| CCC | 12  | Red           |
| CCC | 14  | Violet        |
| CCC | 15  | White         |
| CCC | 19  | Yellow        |
| CCC | 47  | Magenta       |
| CCC | 48  | Amber         |
| CCC | 49  | Buff          |
| CCC | 51  | Bluegreen     |
| CCC | 52  | Bright Blue   |
| CCC | 53  | Aqua          |
| CCC | 55  | Bright Green  |
| CCC | 58  | Bright Yellow |
| CCC | 61  | Bright Red    |
| CCC | 63  | Cyan          |
| CCC | 64  | Purple        |
| CCC | 69  | Pink          |
| CCC | 70  | Lavender      |
| CCC | 999 | Other         |

|     |                                    |         |
|-----|------------------------------------|---------|
| CIC | Color Intensity Category           |         |
|     | Identifies the intensity of color. |         |
| CIC | 0                                  | Unknown |
| CIC | 1                                  | Dark    |
| CIC | 2                                  | Light   |
| CIC | 999                                | Other   |

|     |   |                                |
|-----|---|--------------------------------|
| COC | Conspicuous Category  |                                |
|     | A conspicuous object is easily identifiable and plainly visible under varying conditions of light from harbors, approach channels, or offshore because of its size, shape, or height. |                                |
| COC | 0   | Unknown                        |
| COC | 1   | Conspicuous from sea           |
| COC | 2   | VALUE INTENTIONALLY LEFT BLANK |
| COC | 3   | Radar Conspicuous from sea     |
| COC | 4   | Conspicuous from land          |
| COC | 5   | Conspicuous from air           |
| COC | 6   | Inconspicuous                  |
| COC | 7   | Generally Conspicuous          |
| COC | 8   | Not visual conspicuous         |
| COC | 9   | Visual conspicuous             |
| COC | 10  | Not radar conspicuous          |
| COC | 999   | Other                          |

|     |   |   |
|-----|---|---|
| DMT | Density Measure (% of Tree/Canopy Cover)  |   |
|     | Canopy cover measured by percent within area of feature during the summer season. |   |
| DMT | 0   | Actual Value  |
|     | <u>Units</u>  | <u>Format</u> <u>Range</u> <u>Increment</u> <u>Max Char</u> |
|     | Percent   | Short Integer   0-100      1 %                              |

|            |   |               |                    |                  |                 |
|------------|---|---------------|--------------------|------------------|-----------------|
| <i>DFR</i> | <i>Diffuse Reflectance</i>  |               |                    |                  |                 |
|            | Radar backscatter coefficient, expressed as a ratio   |               |                    |                  |                 |
|            | <u>Units</u>  | <u>Format</u> | <u>Range</u>       | <u>Increment</u> | <u>Max Char</u> |
|            |   | Real(f7.6)    | 0.0 .. 1.0         |                  |                 |
| <i>DY1</i> | <i>Directivity</i>  |               |                    |                  |                 |
|            | Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).  |               |                    |                  |                 |
|            | DY1   | 0             | Unknown            |                  |                 |
|            | DY1   | 1             | Uni                |                  |                 |
|            | DY1   | 2             | Bi                 |                  |                 |
|            | DY1   | 3             | Omni               |                  |                 |
|            | DY1   | 999           | Other              |                  |                 |
| <i>DY2</i> | <i>Directivity (IR)</i>   |               |                    |                  |                 |
|            | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |               |                    |                  |                 |
|            | DY2   | 0             | Unknown            |                  |                 |
|            | DY2   | 1             | Uni                |                  |                 |
|            | DY2   | 2             | Bi                 |                  |                 |
|            | DY2   | 3             | Omni               |                  |                 |
|            | DY2   | 999           | Other              |                  |                 |
| <i>DY3</i> | <i>Directivity (Radar)</i>  |               |                    |                  |                 |
|            | Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).  |               |                    |                  |                 |
|            | DY3   | 0             | Unknown            |                  |                 |
|            | DY3   | 1             | Uni                |                  |                 |
|            | DY3   | 2             | Bi                 |                  |                 |
|            | DY3   | 3             | Omni               |                  |                 |
|            | DY3   | 999           | Other              |                  |                 |
| <i>EMY</i> | <i>Emissivity</i>   |               |                    |                  |                 |
|            | Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature. |               |                    |                  |                 |
|            | <u>Units</u>  | <u>Format</u> | <u>Range</u>       | <u>Increment</u> | <u>Max Char</u> |
|            |   | Real (f7.6)   | 0.0 .. 1.0         |                  |                 |
| <i>EXI</i> | <i>Exitance</i>   |               |                    |                  |                 |
|            | Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm <sup>2</sup> .   |               |                    |                  |                 |
|            | <u>Units</u>  | <u>Format</u> | <u>Range</u>       | <u>Increment</u> | <u>Max Char</u> |
|            |   | Real          | 0.0 .. 1.93428E+25 |                  |                 |
| <i>EXS</i> | <i>Existence Category</i>   |               |                    |                  |                 |
|            | The state or condition of the feature.  |               |                    |                  |                 |
|            | EXS   | 0             | Unknown            |                  |                 |
|            | EXS   | 1             | Definite           |                  |                 |
|            | EXS   | 2             | Doubtful           |                  |                 |
|            | EXS   | 3             | Reported           |                  |                 |
|            | EXS   | 5             | Under Construction |                  |                 |
|            | EXS   | 6             | Abandoned/Disused  |                  |                 |

|     |     |                         |
|-----|-----|-------------------------|
| EXS | 7   | Destroyed               |
| EXS | 10  | Proposed                |
| EXS | 11  | Temporary               |
| EXS | 12  | Alternate               |
| EXS | 18  | Permanent               |
| EXS | 25  | Not Maintained          |
| EXS | 26  | Maintained              |
| EXS | 27  | Closed/Locked           |
| EXS | 28  | Operational             |
| EXS | 30  | Not Isolated            |
| EXS | 31  | Isolated                |
| EXS | 33  | Ruined                  |
| EXS | 35  | Other                   |
| EXS | 44  | Approximate/About       |
| EXS | 45  | Natural                 |
| EXS | 46  | Man-made                |
| EXS | 47  | Swept                   |
| EXS | 48  | Controlled              |
| EXS | 49  | Non-Controlled          |
| EXS | 50  | Non-Tidal               |
| EXS | 51  | Tidal/Tidal Fluctuation |
| EXS | 52  | Dissipating             |
| EXS | 53  | Incomplete              |
| EXS | 54  | Antique/Ancient         |
| EXS | 55  | Unexamined/Unsurveyed   |
| EXS | 56  | Unattended/Unwatched    |
| EXS | 59  | Not Usable              |
| EXS | 60  | Indefinite (Shoreline)  |
| EXS | 61  | Definite Shoreline      |
| EXS | 62  | Partially Destroyed     |
| EXS | 65  | Inactive                |
| EXS | 998 | Not Applicable          |
| EXS | 999 | Other                   |

*FOT Feature Onset*  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

*HGT Height Above Surface Level*  
Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.  
HGT 0 Actual Value  

| Units  | Format        | Range    | Increment | Max Chars |
|--------|---------------|----------|-----------|-----------|
| Meters | Short Integer | 0±32,767 | 1 M       |           |

*GRS Gray Scale value*  
A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.  
(May be helpful for IR and NVG simulations; TBD)  
GRS 0-255

*IMC Internal Material Category*  
Category code for material internal to an object.

| Units | Format  | Range      | Increment | Max Char |
|-------|---------|------------|-----------|----------|
|       | Integer | 1 .. 32767 |           |          |

*LLE Low Level Effects*  
 Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
 LLE T  
 LLE F

*LLL Long Lineal*  
 Reference to a point feature which could potentially look like a long linear feature by radar.  
 Applies to point features  
 LLL T  
 LLL F

*LN1 Layer Number*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*LN2 Layer Number (IR)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*LN3 Layer Number (Radar)*  
 A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).  

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

*OIT Object Illumination Type*  
 Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
 Applies to area features.  

|     |   |       |
|-----|---|-------|
| OIT | 1 | SELF  |
| OIT | 2 | SUN   |
| OIT | 3 | NOSUN |

*RFL Reflectance*  
 Ratio of radiant energy reflected by and object to the amount incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*SER Self Emitter*  
 Indicates that an object has self heating characteristics



SER T  
SER F

SMS

*Surface Material Subtype*

Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.

|     |    |   |
|-----|----|---|
| SMS | 0  | Unknown   |
| SMS | 1  | GW Well graded gravels or gravel-sand mixtures        |
| SMS | 2  | GP Poorly graded gravels or gravel-sand mixtures      |
| SMS | 3  | GM Silty gravels, gravel-sand-silt mixtures           |
| SMS | 4  | GC Clayey gravels, gravel-sand-clay mixture           |
| SMS | 5  | SW Well graded sand or gravelly sands                 |
| SMS | 6  | SP Poorly graded sands or gravelly sands              |
| SMS | 7  | SM Silty sands, sand-silt mixture.                    |
| SMS | 8  | SC Clayey sands, sand-clay mixtures                   |
| SMS | 9  | ML Inorganic silts and very fine sands                |
| SMS | 10 | CL Inorganic clays of low to medium plasticity        |
| SMS | 11 | OL Organic silts and organic silty clays              |
| SMS | 12 | CH Inorganic clays of high plasticity, fat clays      |
| SMS | 13 | MH Inorganic silts, micaceous or diatomaceous         |
| SMS | 14 | OH Organic clays of medium to high plasticity         |
| SMS | 15 | PT Peat and other highly organic soils                |
| SMS | 17 | ML-CL Soil type having both ML and CL characteristics |
| SMS | 18 | Evaporites  |
| SMS | 19 | Alkali  |
| SMS | 20 | Asphalt   |
| SMS | 21 | Ash   |
| SMS | 22 | Basalt  |
| SMS | 23 | Bedrock   |
| SMS | 24 | Boulders  |
| SMS | 25 | Calcareous  |
| SMS | 26 | Chalk   |
| SMS | 27 | Cinders   |
| SMS | 28 | Cirripedia  |
| SMS | 29 | Clay  |
| SMS | 30 | Coal  |
| SMS | 31 | Cobble  |
| SMS | 32 | Coke  |
| SMS | 33 | Composition   |
| SMS | 34 | Conglomerate  |
| SMS | 35 | Copper  |
| SMS | 36 | Coral   |
| SMS | 37 | Coral Head  |
| SMS | 38 | Diamonds  |
| SMS | 39 | Diatoms   |
| SMS | 40 | Dolomite  |
| SMS | 41 | Flynch  |
| SMS | 42 | Foraminifera  |
| SMS | 43 | Fucus   |
| SMS | 44 | Glass   |
| SMS | 45 | Globigerina   |
| SMS | 46 | Gold  |
| SMS | 47 | Granite   |

|     |     |                          |
|-----|-----|--------------------------|
| SMS | 48  | INTENTIONALLY LEFT BLANK |
| SMS | 49  | Gravel                   |
| SMS | 50  | Green Rocks              |
| SMS | 51  | Ground (Shells)          |
| SMS | 52  | Iron                     |
| SMS | 53  | Lava                     |
| SMS | 55  | Lead                     |
| SMS | 56  | Loess                    |
| SMS | 57  | Lumber                   |
| SMS | 58  | Macadam                  |
| SMS | 59  | Madrepores               |
| SMS | 60  | Manganese                |
| SMS | 61  | Marble                   |
| SMS | 62  | Marl                     |
| SMS | 63  | Mattes                   |
| SMS | 64  | Mud                      |
| SMS | 65  | Oil                      |
| SMS | 66  | Oil Blister              |
| SMS | 67  | Ooze                     |
| SMS | 70  | Pebbles                  |
| SMS | 71  | Pumice                   |
| SMS | 72  | Quartz                   |
| SMS | 73  | Radiolaria               |
| SMS | 74  | Radioactive Material     |
| SMS | 75  | Reinforced Concrete      |
| SMS | 76  | Rock/Rocky               |
| SMS | 77  | Rubber                   |
| SMS | 78  | Rubble                   |
| SMS | 79  | Salt                     |
| SMS | 80  | Sand                     |
| SMS | 81  | Sandstone                |
| SMS | 82  | Schist                   |
| SMS | 83  | Spoils/Tailings          |
| SMS | 84  | Scoria                   |
| SMS | 85  | Sewage                   |
| SMS | 86  | Shells                   |
| SMS | 87  | Shingle                  |
| SMS | 88  | Silt                     |
| SMS | 89  | Silver                   |
| SMS | 90  | Slag                     |
| SMS | 91  | Sludge                   |
| SMS | 92  | Snow/Ice                 |
| SMS | 93  | Steel                    |
| SMS | 94  | Stone                    |
| SMS | 95  | Travertin                |
| SMS | 96  | Tufa                     |
| SMS | 97  | Uranium                  |
| SMS | 98  | Volcanic                 |
| SMS | 99  | Volcanic Ash             |
| SMS | 100 | Zinc                     |
| SMS | 101 | Distorted surface        |
| SMS | 102 | Sand and gravel          |
| SMS | 103 | Rip-Rap                  |
| SMS | 104 | Kelp                     |

|     |     |               |
|-----|-----|---------------|
| SMS | 105 | Sandwaves     |
| SMS | 500 | Not Evaluated |
| SMS | 999 | Other         |

*SPC*      *Specular*  
Flag indicating that the object has the quality of being mirror-like.  
SPC T  
SPC F

*SS1*      *Sensors Supported*  
*SS2*  
*SS3*      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
SS1(SS2,SS3) T  
SS1(SS2,SS3) F

*TID*      Tidal/Non-Tidal Category  
Identifies whether a feature is affected by tidal water.  
TID    1      Non-Tidal  
TID    2      Tidal/Tidal fluctuating

*TMR*      *Texture Map Reflectance*  
Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TRL*      *Translucency*  
The degree to which a surface is transparent.  
Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

*TRV*      *Transmissivity*  
Ratio of energy transmitted by an object to the amount of energy incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

*TTP*      *Texture Type*  
Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).  
TTP    1      RGB  
TTP    2      GRAY  
TTP    3      MULTI  
TTP    4      SMFD

*VEG*      *Vegetation Characteristics*  
Type of plant or plantings.  
VEG    0      Unknown  
VEG    1      Dry Crops  
VEG    2      VALUE INTENTIONALLY LEFT BLANK  
VEG    3      VALUE INTENTIONALLY LEFT BLANK  
VEG    4      Rice Paddies

|     |     |  |
|-----|-----|--|
| VEG | 5   | Agriculture with scattered forests or rows of tree |
| VEG | 6   | Cranberry  |
| VEG | 7   | Peat   |
| VEG | 8   | Pasture, meadow, steppe                            |
| VEG | 9   | Grassland with scattered trees                     |
| VEG | 10  | Tropical Grass                                     |
| VEG | 11  | Casuarina  |
| VEG | 12  | Coniferous   |
| VEG | 16  | Nipa Palm  |
| VEG | 17  | Palm   |
| VEG | 18  | Filao  |
| VEG | 19  | Mangrove   |
| VEG | 20  | Grove  |
| VEG | 22  | Wheat  |
| VEG | 23  | Corn   |
| VEG | 24  | Deciduous  |
| VEG | 25  | Evergreen  |
| VEG | 26  | Cork-Oak   |
| VEG | 27  | Fir  |
| VEG | 28  | Beech  |
| VEG | 29  | Eucalyptus   |
| VEG | 30  | Oak  |
| VEG | 31  | Pine   |
| VEG | 32  | Walnut   |
| VEG | 33  | Maple  |
| VEG | 34  | Poplar   |
| VEG | 35  | Olive  |
| VEG | 36  | Chestnut   |
| VEG | 37  | Larch  |
| VEG | 38  | Cypress  |
| VEG | 39  | Peach  |
| VEG | 40  | Apple  |
| VEG | 41  | Carob  |
| VEG | 42  | Almond   |
| VEG | 43  | Citrus   |
| VEG | 44  | Elm  |
| VEG | 45  | Ilex   |
| VEG | 46  | Birch  |
| VEG | 47  | Ash  |
| VEG | 48  | Hazel  |
| VEG | 49  | VALUE INTENTIONALLY LEFT BLANK                     |
| VEG | 49  | Mixed Deciduous                                    |
| VEG | 50  | Mixed Trees  |
| VEG | 51  | Herb/Shrub   |
| VEG | 52  | Forest Clearing                                    |
| VEG | 53  | Brushland open to medium density                   |
| VEG | 54  | Brushland medium to dense density                  |
| VEG | 55  | With trees   |
| VEG | 56  | Without trees                                      |
| VEG | 999 | Other  |

#### VRG

#### Vegetation Roughness Category

An indexed value indicating the roughness of vegetation.

VRG 1 0.00 100% reduction

|     |    |  |
|-----|----|--|
| VRC | 2  | 0.05   |
| VRC | 3  | 0.10   |
| VRC | 4  | 0.15   |
| VRC | 5  | 0.20   |
| VRC | 6  | 0.25   |
| VRC | 7  | 0.30   |
| VRC | 8  | 0.35   |
| VRC | 9  | 0.40   |
| VRC | 10 | 0.45   |
| VRC | 11 | 0.50 50% reduction.  |
| VRC | 12 | 0.55   |
| VRC | 13 | 0.60   |
| VRC | 14 | 0.65   |
| VRC | 15 | 0.70   |
| VRC | 16 | 0.75   |
| VRC | 17 | 0.80   |
| VRC | 18 | 0.85   |
| VRC | 19 | 0.90   |
| VRC | 20 | 0.95   |
| VRC | 21 | 1.00 0% reduction.   |
| VRC | 22 | Not evaluated area where development has precluded evaluation of soil. |
| VRC | 23 | NA   |

#### Vegetation Void Collection Area Feature Class

ID

F-CODE/DESCRIPTION

ZD020 Void Collection Area

VCA

Void Collection Attribute

Reason data is not collected.

|     |     |  |
|-----|-----|--|
| VCA | 0   | Unknown                                      |
| VCA | 1   | Data Not Requested By User                   |
| VCA | 2   | Area Too Rough to Collect                    |
| VCA | 3   | No Available Imagery                         |
| VCA | 4   | Different Height Threshold Within Data Block |
| VCA | 5   | Low Data Collection Criteria                 |
| VCA | 6   | No Available Map Source                      |
| VCA | 7   | No Suitable Imagery                          |
| VCA | 8   | Data Not Required                            |
| VCA | 999 | Other  |

## Appendix M. Specific Enhancements

### BASIC EARTH SURFACE

Underwater Bottom Features attributes.

|         |  |
|---------|--|
| F-Codes | UB010 Bottom<br>UB020 Shelf  |
| PWC     | Percent Water Content<br>Water content of the bottom.                                |
| RSS     | Ratio Sound Speed<br>Ratio of sediment sound speed to water sound speed.             |
| SGS     | Sand Grain Size<br>Mean grain size   |
| SLC     | Sediment Layer Conductivity  |
| SRH     | Sand Ridge Height(ft.)   |
| SSD     | Sediment Surface Density   |
| SSG     | Sound Speed Gradient<br>Sediment sound speed gradient ( at water-sediment interface) |
| SSS     | Sediment Shear Strength  |

Surface Feature composite attribute.

|     |   |
|-----|---|
| SRT | Surface Type<br>This is a composite attribute (MCC, STP and SMC from the Digest)<br>Soils described by the Unified Soil Classification System (USCS) or primary material composition. |
| SRT | 0 Unknown   |
| SRT | 1 GW Well graded gravels or gravel-sand mixtures  |
| SRT | 2 GP Poorly graded gravels or gravel-sand mixtures  |
| SRT | 3 GM Silty gravels, gravel-sand-silt mixtures   |
| SRT | 4 GC Clayey gravels, gravel-sand-clay mixture   |
| SRT | 5 SW Well graded sand or gravelly sands   |
| SRT | 6 SP Poorly graded sands or gravelly sands  |
| SRT | 7 SM Silty sands, sand-silt mixture.  |
| SRT | 8 SC Clayey sands, sand-clay mixtures   |
| SRT | 9 ML Inorganic silts and very fine sands  |
| SRT | 10 CL Inorganic clays of low to medium plasticity   |
| SRT | 11 OL Organic silts and organic silty clays   |
| SRT | 12 CH Inorganic clays of high plasticity, fat clays   |
| SRT | 13 MH Inorganic silts, micaceous or diatomaceous  |
| SRT | 14 OH Organic clays of medium to high plasticity  |
| SRT | 15 PT Peat and other highly organic soils   |
| SRT | 17 ML-CL Soil type having both ML and CL characteristics  |
| SRT | 18 Evaporites   |

|     |    |                          |
|-----|----|--------------------------|
| SRT | 19 | Alkali                   |
| SRT | 20 | Asphalt                  |
| SRT | 21 | Ash                      |
| SRT | 22 | Basalt                   |
| SRT | 23 | Bedrock                  |
| SRT | 24 | Boulders                 |
| SRT | 25 | Calcareous               |
| SRT | 26 | Chalk                    |
| SRT | 27 | Cinders                  |
| SRT | 28 | Cirripedia               |
| SRT | 29 | Clay                     |
| SRT | 30 | Coal                     |
| SRT | 31 | Cobble                   |
| SRT | 32 | Coke                     |
| SRT | 33 | Composition              |
| SRT | 34 | Conglomerate             |
| SRT | 35 | Copper                   |
| SRT | 36 | Coral                    |
| SRT | 37 | Coral Head               |
| SRT | 38 | Diamonds                 |
| SRT | 39 | Diatoms                  |
| SRT | 40 | Dolomite                 |
| SRT | 41 | Flynch                   |
| SRT | 42 | Foraminifera             |
| SRT | 43 | Fucus                    |
| SRT | 44 | Glass                    |
| SRT | 45 | Globigerina              |
| SRT | 46 | Gold                     |
| SRT | 47 | Granite                  |
| SRT | 48 | INTENTIONALLY LEFT BLANK |
| SRT | 49 | Gravel                   |
| SRT | 50 | Green Rocks              |
| SRT | 51 | Ground (Shells)          |
| SRT | 52 | Iron                     |
| SRT | 53 | Lava                     |
| SRT | 55 | Lead                     |
| SRT | 56 | Loess                    |
| SRT | 57 | Lumber                   |
| SRT | 58 | Macadam                  |
| SRT | 59 | Madrepores               |
| SRT | 60 | Manganese                |
| SRT | 61 | Marble                   |
| SRT | 62 | Marl                     |
| SRT | 63 | Mattes                   |
| SRT | 64 | Mud                      |
| SRT | 65 | Oil                      |
| SRT | 66 | Oil Blister              |
| SRT | 67 | Ooze                     |
| SRT | 70 | Pebbles                  |
| SRT | 71 | Pumice                   |
| SRT | 72 | Quartz                   |
| SRT | 73 | Radiolaria               |
| SRT | 74 | Radioactive Material     |
| SRT | 75 | Reinforced Concrete      |

|     |     |                   |
|-----|-----|-------------------|
| SRT | 76  | Rock/Rocky        |
| SRT | 77  | Rubber            |
| SRT | 78  | Rubble            |
| SRT | 79  | Salt              |
| SRT | 80  | Sand              |
| SRT | 81  | Sandstone         |
| SRT | 82  | Schist            |
| SRT | 83  | Spoils/Tailings   |
| SRT | 84  | Scoria            |
| SRT | 85  | Sewage            |
| SRT | 86  | Shells            |
| SRT | 87  | Shingle           |
| SRT | 88  | Silt              |
| SRT | 89  | Silver            |
| SRT | 90  | Slag              |
| SRT | 91  | Sludge            |
| SRT | 92  | Snow/Ice          |
| SRT | 93  | Steel             |
| SRT | 94  | Stone             |
| SRT | 95  | Travertin         |
| SRT | 96  | Tufa              |
| SRT | 97  | Uranium           |
| SRT | 98  | Volcanic          |
| SRT | 99  | Volcanic Ash      |
| SRT | 100 | Zinc              |
| SRT | 101 | Distorted surface |
| SRT | 102 | Sand and gravel   |
| SRT | 103 | Rip-Rap           |
| SRT | 104 | Kelp              |
| SRT | 105 | Sandwaves         |
| SRT | 500 | Not Evaluated     |
| SRT | 999 | Other             |

## TRANSPORTATION

Aeronautical Features attribute.

CSP      Country/State/Province Code

## HYDROGRAPHY

Attributes

F-Codes

BA000 Water Surface  
BA001 Water Column Profile

DEP

Depth of Reading  
The depth of the reading below water, measured from the top or surface of the feature, referenced to a specified vertical datum. Recorded values are positive numbers.



|     |   |                |              |                  |                     |
|-----|---|----------------|--------------|------------------|---------------------|
|     | HDP   | 0              | Actual Value |                  |                     |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Maximum Char</u> |
|     | Meters  | Floating Point |              | 0.1 M            |                     |
| SAL | Salinity at DEP<br>Salinity in parts per thousand.                              |                |              |                  |                     |
|     | SAL   | 0              | Actual Value |                  |                     |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Maximum Char</u> |
|     | Parts/thousand  | Floating Point |              |                  |                     |
| SOV | Sound Speed at DEP<br>Sound speed in meters per second.                         |                |              |                  |                     |
|     | SOV   | 0              | Actual Value |                  |                     |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Maximum Char</u> |
|     | meters/sec  | Floating Point |              |                  |                     |
| ST1 | Surface Temperature (month 1)<br>Surface Temperature in first month of season.  |                |              |                  |                     |
|     | ST1   | 0              | Actual Value |                  |                     |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Maximum Char</u> |
|     | deg C   | Floating Point |              |                  |                     |
| ST2 | Surface Temperature (month 2)<br>Surface Temperature in second month of season. |                |              |                  |                     |
|     | ST2   | 0              | Actual Value |                  |                     |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Maximum Char</u> |
|     | deg C   | Floating Point |              |                  |                     |
| ST3 | Surface Temperature (month 3)<br>Surface Temperature in third month of season.  |                |              |                  |                     |
|     | ST3   | 0              | Actual Value |                  |                     |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Maximum Char</u> |
|     | deg C   | Floating Point |              |                  |                     |
| TEM | Temperature at DEP<br>Temperature at specified depth DEP.                       |                |              |                  |                     |
|     | TEM   | 0              | Actual Value |                  |                     |
|     | <u>Units</u>  | <u>Format</u>  | <u>Range</u> | <u>Increment</u> | <u>Maximum Char</u> |
|     | deg C   | Floating Point |              |                  |                     |

## ELEVATION

### Attributes

#### F-Codes

CA027 Berm  
CA050 Surface

#### PYT

Polygon Type  
PYT 1 Triangulated Irregular Network (triangle)

## GENERAL

Visual, IR and Radar Attributes found throughout all coverages except Hydrography.

#### ABS

Absorptivity

Ratio of radiant (thermal) energy to the energy incident upon it.

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

#### DFR

Diffuse Reflectance

Radar backscatter coefficient, expressed as a ratio

| Units | Format     | Range      | Increment | Max Char |
|-------|------------|------------|-----------|----------|
|       | Real(f7.6) | 0.0 .. 1.0 |           |          |

#### DY1

Directivity

Indicator of shape of the planar response curve of a feature or model to a sensor (visual response).

|     |     |         |
|-----|-----|---------|
| DY1 | 0   | Unknown |
| DY1 | 1   | Uni     |
| DY1 | 2   | Bi      |
| DY1 | 3   | Omni    |
| DY1 | 999 | Other   |

#### DY2

Directivity (IR)

Indicator of shape of the planar response curve of a feature or model to a sensor (infrared response).

|     |     |         |
|-----|-----|---------|
| DY2 | 0   | Unknown |
| DY2 | 1   | Uni     |
| DY2 | 2   | Bi      |
| DY2 | 3   | Omni    |
| DY2 | 999 | Other   |

#### DY3

Directivity (Radar)

Indicator of shape of the planar response curve of a feature or model to a sensor (Radar response).

|     |     |         |
|-----|-----|---------|
| DY3 | 0   | Unknown |
| DY3 | 1   | Uni     |
| DY3 | 2   | Bi      |
| DY3 | 3   | Omni    |
| DY3 | 999 | Other   |

#### EMY

Emissivity

Ratio of the rate of IR radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

EXI Exitance  
Rate of flow of infrared radiation from a feature per unit of surface area expressed in watts/cm<sup>2</sup>.

| Units | Format | Range              | Increment | Max Char |
|-------|--------|--------------------|-----------|----------|
|       | Real   | 0.0 .. 1.93428E+25 |           |          |

FOT Feature Onset  
Indicator for changing radar backscatter coefficients.  
FOT T  
FOT F

GRS Gray Scale value  
A monochrome strip of shades ranging from white to black with intermediate shades of gray. Allows derivation of reflectance and emissivity.  
(May be helpful for IR and NVG simulations; TBD)  
GRS 0-255

LLE Low Level Effects  
Indicates normalcy to a terrain plate and therefore is an indication of higher radar backscatter.  
LLE T  
LLE F

LLL Long Lineal  
Reference to a point feature which could potentially look like a long linear feature by radar.  
Applies to point features  
LLL T  
LLL F

LN1 Layer Number  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (visual).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN2 Layer Number (IR)  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be rendered for simulation. Higher values indicate a higher display priority (infrared).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

LN3 Layer Number (Radar)  
A relative priority number indicating the sequence in which overlapping culture features, overlapping model objects, or overlapping textures should be

rendered for simulation. Higher values indicate a higher display priority (radar).

| Units | Format  | Range          | Increment | Max Char |
|-------|---------|----------------|-----------|----------|
|       | Integer | 0.. 2147483647 |           |          |

**OIT**      Object Illumination Type  
 Identifier indicating how illumination of this object is to be computed (self-luminous, sun luminous, no sun illumination)  
 Applies to area features.  
 OIT    1      SELF  
 OIT    2      SUN  
 OIT    3      NOSUN

**RFL**      Reflectance  
 Ratio of radiant energy reflected by and object to the amount incident upon it.  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**SER**      Self Emitter  
 Indicates that an object has self heating characteristics  
 SER T  
 SER F

**SMS**      Surface Material Subtype  
 Indicator to further refine the SRT, used to add temporal breakup characteristics. Specific occurrences will be explained in TXT field.  

| Units  | Format        | Range    | Increment | Max Char |
|--------|---------------|----------|-----------|----------|
| Meters | Short Integer | 0 .. 255 |           |          |

**SPC**      Specular  
 Flag indicating that the object has the quality of being mirror-like.  
 SPC T  
 SPC F

**SS1**      Sensors Supported  
**SS2**  
**SS3**      Three separate flags indicating support for different types of simulators (radar, visual, infrared, respectively)  
 SS1(SS2,SS3) T  
 SS1(SS2,SS3) F

**TMR**      Texture Map Reflectance  
 Reflectance value assigned to a texture map  

| Units | Format      | Range      | Increment | Max Char |
|-------|-------------|------------|-----------|----------|
|       | Real (f7.6) | 0.0 .. 1.0 |           |          |

**TRL**      Translucency  
 The degree to which a surface is transparent.  
 Type - Real(6 sd)      Range - 0.0 .. 100.0  

| Units | Format      | Range        | Increment | Max Char |
|-------|-------------|--------------|-----------|----------|
|       | Real (f7.3) | 0.0 .. 100.0 |           |          |

TRV      Transmissivity  
 Ratio of energy transmitted by an object to the amount of energy incident upon it.

| <u>Units</u> | <u>Format</u> | <u>Range</u> | <u>Increment</u> | <u>Max Char</u> |
|--------------|---------------|--------------|------------------|-----------------|
|              | Real (f7.6)   | 0.0 .. 1.0   |                  |                 |

TTP      Texture Type  
 Type of data contained within a texture map (RGB, intensity, multi spectral, SMC\_FDC).

|     |   |       |
|-----|---|-------|
| TTP | 1 | RGB   |
| TTP | 2 | GRAY  |
| TTP | 3 | MULTI |
| TTP | 4 | SMFD  |

## Appendix N. Attribute Adjustments

*The following proposed changes to EVPF attributes have been suggested by experts in the field of Modeling and Simulation, data modeling, and/or Vector Product Format. These changes are being evaluated at publication time.*

**Absorptivity** — change definition to “the ratio of the energy absorbed to the energy incident upon it.”

**Diffuse reflectance** — change definition to “the ratio of the energy reflected from a material to the energy incident and applies to the visible, IR, and radar.”

**Exitance** should not be included.

Include **temperature** and/or **water content** of the material for those features (TBD) whose key EO/IR parameters are derived from these attributes.

Determine if the following are needed attributes of underwater bottom feature class:

- ◆ Classifications set forth in Oceanic and Atmospheric Master Library (OAML) High Frequency Bottom Loss (HFBL) database for high frequency bottom loss: Bottom Loss Classifications Range 1-9
- ◆ Additional geoaoustic parameters set forth in OAML Low Frequency Bottom Loss (LFBL) database for low frequency bottom loss:
  - Thin-layer thickness
  - Thin-layer density
  - Sediment sound speed profile curvature parameters
  - Surface attenuation
  - Attenuation gradient (constant)
  - Attenuation frequency component (shallow water)
  - Basement reflection coefficient
  - Average background thickness (near surface)
  - Attenuation of layers
  - Density below layers
  - Reflectivity angle
  - Two-way travel time